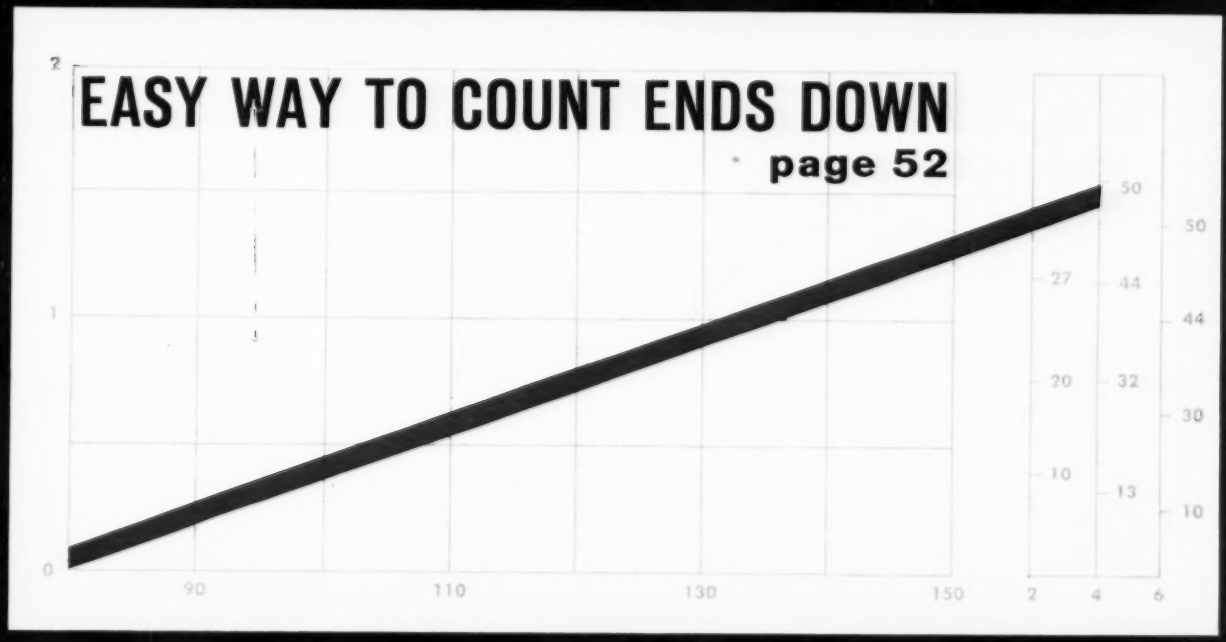
Textile World
JUNE, 1959
A McGRAW-HILL PUBLICATION

KNOW-HOW — KNOW-WHY
The Publication in Textiles



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June, 1959

Volume 109, No. 6

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TEXTILE BUSINESS

Textile World

JUNE • 1959

Strength of Mill Production Sets New Decade Pattern

Mill production reached new high ground last month. On TEXTILE WORLD's Index chart (p. 10), the curve rose to 115, level with February 1956 and only two Index points, about 1.7%, under the 1955 high of 117.

When the 1955 high is broken, as it now seems certain to be this year, the next high target will be May 1953, only about 3% higher than the 1955 peak. That would be 121 on the Index chart, six points above last month's estimate.

If the normal postrecession-year pattern holds this fall, the 1953 high will also be broken, throwing the high target back to the fall of 1950, the highest point of the 1950's decade.

•

This strong upward movement of production in the January-May period has occurred only once before in the 1950's—in 1953.

In that period, the early-year increase came immediately after a drop of about 8% in the latter part of 1952 and preceded the recession-year drop in late 1953.

These conditions do not hold for the present; so the January-May rise sets a new pattern for the 1950's.

It is too early yet to know what the new pattern signifies, other than an unusually strong demand for textile goods. But it seems clear that a significant change is taking place in the fortunes of the textile industry.

The famous two-year textile cycle got off stride in 1955 and 1956. The present strength may be a correction.

•

But it may also signify a more-important longer-term change.

In December 1958 (p. 5) TEXTILE WORLD published a study entitled "Textiles' Major Trend Now Poised for Reversal." By chart-analysis methods, that study indicated that the eight-year downward trend of textile production was at a critical point. Indications were that a change to a medium-term uptrend was imminent.

The downtrend line has been quite significantly broken on the upside since that article was published, and production and demand are now showing a strength not seen before at this time of year during the whole eight-year downtrend of the 1950's.

•

That does not mean that the strength will continue unabated, even though a seven- or eight-year uptrend is under way.

The two-year cycle and the general-business cycle will continue to give ups and downs. But if we are in an uptrend, the peaks and dips with the cycles will be successively higher.

It is almost certain, for example, that there will be a slight dip in July of this year because of vacation shutdowns. It is also almost certain that a cyclical dip will occur either this fall or early next year.

But if an uptrend is under way, the dip will not be deep and the subsequent rise will be strong. If it does work that way, we will then have the first confirmation that an uptrend is in progress.

Australia's Wool Clip Will Be Second Highest

MELBOURNE — Official Australian estimates for the wool clip in 1958-59 have been increased again. It now appears that the total will be 4.6-million bales, second only to the record clip of 4,867,300 bales in 1956-57 and about 5.7% greater than last-season's clip. The increase is chiefly confined to shorn-wool production.

The present estimate compares with the July estimate of 4.2-million bales and the December estimate of 4.3-million bales.

Because of the heavier quality of the wool, weight will show an even greater increase. Weight is now estimated at 1,544-million lbs. greasy wool, 7.7% more than last-season's production.

Various reasons are given for the serious variations in estimates. Brokers point out that mistaken estimates have an extremely important influence on prices and market trends and something should be done to avoid large discrepancies between estimates and actual figures. A revised method of making estimates is being studied.

Europe's Common Market Has World in a Stir

The impact of the European Common Market as a world-powerful textile force is becoming more and more evident.

Since the last issue of TEXTILE WORLD went to press, these events, sparked by the Common Market, occurred:

- **The six Market countries** unanimously agreed on strict textile-imports curbs, aimed specifically at low-cost, government-subsidized textiles from Asian, Soviet, and some South American countries.

- **A U. S. spinning mill** announced the formation of a Netherlands corporation to build a spinning mill in that Euromart country.

- **The British government** announced a mill-modernization aid program to make its cotton mills more competitive (see "British Cot-

Textile Stocks Hold Up In Wavering Market

NEW YORK—Several textile stocks continued to outperform the Dow-Jones Industrials Average in the up-and-down gyrations that hit the general stock market for the last two months.

From mid-March until mid-May, the Dow-Jones Industrials moved nervously up and down in what many brokers regarded as preparation for a "traditional summer rise." The Average ended the two-months period only 10 points above the starting point, 620 from 610, a gain of only 1.6%.

The average of 16 textile stocks listed on the New York Stock Exchange followed the up-and-down movements but ended the two-months period 5.9% above the starting point.

The performance of individual issues varied widely—from a 1.5% loss by Cannon Mills to a 28.5% gain by Reeves Bros.

Cannon was the only loser in the 16 issues. But five other issues marked time, ending the two months at the same price at which they started the period.

Here's how the 16 issues performed:

	Mid-October	Mid-March	Mid-May	March-May Change
Am. Enka	24	31	36	+13.9 (%)
Am. Viscose	35	45	47	+ 4.2
Beaunit	—	22	22	0
Bigelow-Sanford	12	15	15	0
Burlington	14	16	18	+11.1
Cannon	65	66	65	— 1.5
Celanese	23	30	34	+13.3
Cone	16	15	15	0
Duplan	12	11	11	0
Jas. Lees	31	46	50	+ 8.7
Mohasco	10	15	16	+ 6.6
Mojud	12	14	14	0
Reeves	11	14	18	+28.5
J. P. Stevens	26	29	30	+ 3.4
United Merch.	—	19	20	+ 5.2
Van Raalte	—	33	35	+ 6.0
Avg.		26.31	27.87	
16 Textile Stocks Avg.				+ 5.9%
Dow-Jones Industrial Avg.				+ 1.6%

●

Six of the 16 issues racked up gains of 100% or more from the beginning of the market surge in April of last year to last month. But strong changes in the velocity of gain began to show up.

Mohasco, for example, favored by good earnings and a tax-loss carry-over that canceled its total tax bill, gained a whopping 300%, from 4 to 16, in the 14 months period. But its gain in the last two months slowed down to the 16-stocks average, about 6%, and less than half the 13% average gain in the two months by the six issues.

Reeves Bros., second biggest gainer in the 14 months, with a 200% rise from 6 to 18, was still running stronger than any of the other six issues or the 16 issues. Reeves's gain in the March-May period was 28%, from 14 to 18, compared with the 5.9% gain by the 16-stocks average, the 13.1% gain by the six-stocks average, and the 1.6% gain by the Dow-Jones Industrials Average.

Celanese, the third biggest 14-months gainer, and **American Enka**, the fourth, were still strong favorites, each gaining 13% in the shaky March-May period.

Here's how the velocity of increase varied for the six big gainers in three periods of the 14 months:

	1958 low to Mid-October	Mid-October to Mid-March	Mid-March to Mid-May	Total gain
Am. Enka	71 (%)	29 (%)	13 (%)	157 (%)
Burlington	55	15	11	100
Celanese	91	30	13	183
Jas. Lees	24	48	8	100
Mohasco	150	50	6	300
Reeves	83	45	28	200

U.S. Mills Will Push For Firm Imports Control

U. S. mills are preparing a strong push to bring control of imports into the hands of the U.S. government. Reasons—

• The "voluntary" quota plan of the Japanese backfired this year.

• Hong Kong, an ever-growing threat, refused any sort of "voluntary" control.

•

Washington officials consider the fight over Japanese cotton-textile imports closed. They have not been asked by domestic mills for further action and doubt that mills could now make a convincing case for added quota protection.

They point out that the 1959 voluntary-quota curbs taken by Tokyo are only 12.2-million sq. yds., or approximately 5%, higher than the 1956 level of 235-million sq. yds. More important, the Japanese controls contain strict prohibitions against borrowing from an unfilled quota to ship goods under a filled quota. Also, officials cite the U.S. understanding that the 1959 quotas will apply for two years, until 1961.

This, in Washington's view, is a fair compromise between the original opposing positions of domestic mills and Japanese exporters and officials.

The Office of Civil and Defense Mobilization, during the Senate textile hearings held last year by the commerce subcommittee headed by Sen. John Pastore (D-R. I.), pledged itself to initiate action if imports appeared to threaten further displacement of vital U.S. production capacity. This has not happened, and won't under the new quota agreement, agency staffers argue.

In fact, say OCDM staffers, they are now finding that the investigation of wool knit gloves, which the agency itself started

ton Industry To Get Drastic Overhaul," p. 6).

• **Eleven European countries not in the Common Market** revived efforts to broaden the Market into a free-trade area. Efforts to do this failed last year.

• **The International Committee of the United States Trademark Assn.** investigated the effects of Euromart on trademark protection.

•

The Common Market represents a big share of the world's textile industry. Five of the six countries are important producers of textile goods, and four of them are important in textile-machinery building. Practically all of them are exporters and importers of both textiles and textile equipment.

What makes Euromart so important to the rest of the world is that it will function as an economic unit, highly industralized and increasingly efficient. With a combined population of some 160-million to develop a mass market and make specialization and mass production possible, plus textile know-how equal to any in the world, Euromart will certainly become one of the world's leading textile forces, very likely the leading one except for cheaper goods.

With both price and quality in its favor, it will be a much stronger textile exporter than the U. S. textile industry.

Kendall Co. To Apply For NYSE Trading

The Kendall Co. announced that it will apply for listing its common stock on the New York Stock Exchange.

Kendall manufactures surgical dressings, textile specialties, coatings, and other products.

In the last three years, the number of stockholders increased to 3,704, a 50% increase, the company said.

Mill Failures Down

Mill failures in April amounted to four, with liabilities of $290,000, compared to eight failures with liabilities of $746,000 in April 1958.

That brings the 1959 totals to 22 failures with liabilities of $2,092,000, compared to 33 failures with liabilities of $3,825,000 in the first four months of 1958, Dun & Bradstreet announced.

last winter, is not supporting domestic mills' contention that new import curbs are needed on these products. Glove-makers are turning to Orlon supplied by the same domestic mills that formerly supplied wool knit fabric, not to wool imported from overseas, according to officials conducting the investigation.

●

But U.S. mills are not likely to forget the matter.

The American Cotton Manufacturers Institute and the Northern Textile Assn., together representing the whole U.S. cotton-textile industry, issued a formal statement in which they said, "Only through controls imposed by our government can American productivity be preserved."

Right now, a greater worry than Japanese imports are the surging imports from Hong Kong. In two years, apparel imports jumped from $670,000 in 1956 to $17,600,000 in 1958—and the flood is continuing this year.

Asst. Sec'y of Commerce Henry Kearns went to Hong Kong in February to try to persuade them to control imports voluntarily. Hong Kong refused. The U.S. market is now a sitting duck for Hong Kong goods—a large volume of which is thought to be Red China goods moving through Hong Kong.

The Japanese unilateral quota action, plus their assumption that exports to the U.S. will continue to increase in the future, and the growing threat of Hong Kong give U.S. mills strong grist for pushing to bring imports control into U.S. hands.

British Cotton Industry To Get Drastic Overhaul

LONDON—The British cotton-textile industry is headed for a complete reorganization. All excess capacity will be eliminated, and remaining capacity will be modernized and re-equipped.

In a five-year program that will cost the government about 30-million pounds ($84 million), the industry will scrap—

- About 12-million of its present 24-million mule spinning spindles
- About 1.6-million twister spindles, 60% of the present spindles in place
- About 10% of present condenser spindles
- At least 70,000 of the present 240,000 looms in place
- Between 25% and 40% of present finishing equipment

●

The plan will work this way—

- The government will pay two-thirds of the cost of scrapping the equipment, the industry one-third.
- Once the Board of Trade is satisfied about the amount of capacity to be eliminated, the government will pay one-fourth the cost of modernizing present equipment and installing new equipment. The industry will pay the other three-fourths.
- The industry must compensate workers whose jobs are eliminated.

Details of how industry charges will be prorated to mills have not been given, but the program will be carried out by the Cotton Board created under the Board of Trade in 1947.

Sales and Profits Up For Fiber Producers

Sales and profits of fiber producers shared the upward movement by mills in the first quarter of this year. Sales of four fiber producers ran 31% ahead of the first quarter of 1958 and net earnings were 190% ahead.

Net profit as a percentage of sales rose from an average of 2.4% in the first quarter of last year to 5.2% this year.

Here's how the four producers made out:

	1959	1958
American Enka		
Sales ..	$23,742,000	$15,484,000
Net ...	1,399,256	364,371
Net % of sales	5.9	2.3
American Viscose		
Sales ..	$62,577,000	$49,368,000
Net ...	3,644,000	683,000
Net % of sales	5.8	1.3
Owens-Corning Fiberglas		
Sales ..	$46,130,126	$35,940,160
Net ...	2,575,926	1,892,985
Net % of sales	5.4	5.2
Industrial Rayon		
Sales ..	$15,402,764	$11,645,674
Net ...	262,880	(loss)244,657
Net % of sales	1.7	(loss) 2.9

Department-Store Sales Slip 1% in Gain Over 1958

Department-store sales, spurting to 9% ahead of last year in the first three and a half months of this year on the strength of Easter sales, slipped back 1% ahead near the middle of last month.

For the first four and a half months, sales were 8% ahead of the same 1958 period. A month before, they were 9% ahead.

In general, the industry's share of the charges will be raised by levies against persons registered as doing business in the industry section concerned. For example, each spinning mill will be charged its share of the cost of reorganizing the spinning section of the industry.

One levy will be made to defray the equipment costs. Another will be made at the request of the section concerned to pay the cost of displaced-workers' compensation.

●

Spinners and doublers estimate that it will cost them about $134-million to modernize and re-equip. Weavers estimate their cost at $84-million to $126-million.

Finishers say their problem is primarily one of eliminating excess equipment and reorganizing what's left.

A sharp time limit is placed on participation in the program. The plan was announced in Parliament on April 23. Any mill scrapping equipment after that date is eligible for compensation. But the whole program must be completed in five years, and all individual programs must be started in three years.

Certain other restrictions and warnings are contained in the Parliamentary bill and the White Paper explaining it.

- Machinery and equipment removed must be scrapped; it cannot be sold, saved, or given away.
- Only productive machinery and equipment comes under the program. Office equipment, vehicles, etc. are excluded.
- Management and workers are expected to operate the new equipment at its highest advantage. "Extended shift-working" [presumably meaning multiple shifts] is expected because of greater economy.

●

The textile industry in Britain is in grave trouble.

In the White Paper accompanying the new Cotton Industry Act, the chief cause of "the tremendous loss of business" suffered over the last 50 years was given as "the development of their own textile industries by our overseas customers."

In 1912, Britain's annual production of woven cloth was 8-billion yds. and cloth exports were 6.9-billion.

In 1958, production was down to 2-billion yds. and exports to 455-million yds.

The decline of exports has been continuous since the early 1920's except for a brief period following World War II. Exports to India alone once amounted to 2.5-billion yds., five and a half times total exports in 1958.

But now Lancashire mills are faced with the possible loss of even the home market.

Import restrictions can control imports from textile-producing countries outside the Commonwealth; but for political reasons, the government is not willing to impose controls on producers such as Canada, India, Pakistan, and Hong Kong. And these countries, particularly India and Hong Kong, are rapidly building up big exporting textile industries.

Lancashire's only alternative seems to be to reduce the size of the industry, modernize for competitive efficiency, and concentrate on qualities in which the Commonwealth countries are not efficient.

These Federal Reserve districts dropped below their year's gain during the four weeks ended May 9:

Boston—4% ahead for the four weeks, compared to 5% ahead for the year.

Philadelphia—1% vs. 7%

Richmond—3% vs. 8%

San Francisco—7% vs. 11%

In the other eight districts, four-weeks' sales were enough ahead of last year to bring the four-weeks' average up to 8%, even with the year's gain.

Acetate-Rayon Shipments Up 38% Over April 1958

Acetate yarn and rayon shipments amounted to 97.8-million lbs. in April, down 2% from March shipments but 38½% above April 1958 shipments of 70.6-million lbs., Textile Economics Bureau announced.

In the first quarter of 1959, man-made-fiber production, excluding acetate staple and tow, amounted to 475.9-million lbs., up 3% from the 444.2-million lbs. produced in the fourth quarter of 1958 and 23% above production in the first quarter of 1958.

Production in the first quarter of this year included:

Acetate yarn and rayon—271.1-million lbs.

Noncellulosic fibers—153.8-million lbs.

Glass fibers—33-million lbs.

New England Workers Get a 10¢ Pay Raise

Some 60,000 New England textile workers received a wage increase of 10¢ an hour last month as a result of mill-union negotiations, their first increase in three years.

Average wage rates are now said to be $1.51 an hour in cotton and rayon mills and $1.65 an hour in woolen and worsted mills.

Textron To Buy Pittsburgh Steel

Textron, Inc., has agreed to purchase Pittsburgh Steel Foundry. The price bid is $15.50 a share, with 357,251 shares of common stock outstanding.

Pittsburgh Steel Foundry, with plants located in Pennsylvania, manufactures steel castings and heavy machinery. Sales for the last five years averaged $15,670,000 and pretax earnings $1,140,000. The company employs about 1,800 people.

Tire Cord and Fabric Dropped 15% in 1958

U. S. production of tire cord and tire fabric dropped more than 15% in 1958, compared to 1957, the Dept. of Commerce reports.

Production in 1958 was 402.7-million lbs., compared to 476.9-million lbs. in 1957.

That placed 1958 production over 28% below the high in 1955, when it hit 561.5-million lbs.

Nylon continued to gain in tire-cord and tire-fabric use last year, amounting to 95.6-million lbs., equal to 24% of the total. In 1957, nylon accounted for 86.7-million lbs., only a little more than 18% of the total for that year. In 1955, nylon accounted for about 9% of the total.

Reclaimed Nylon

Nylon reclaimed from old tires may be on the market soon.

U. S. Rubber Reclaiming Co., Buffalo, N. Y., now in the business of reclaiming rubber from old tires, has announced that it will extend reclaiming operations to the nylon in old tires.

Quality of the reclaimed nylon is said to be good, but the nylon is tinged instead of white.

Canadians Complain About Japanese Imports

WINNIPEG—The Canadian textile industry's troubles with Japanese imports brought sharp criticism last month.

Winnipeg's work-garment industry, the largest user of Canadian fabrics, warned that unless Japanese imports of garments are drastically reduced, most of the local plants will have to shut down.

Two Winnipeg companies have already stopped manufacturing certain lines and are importing them from Japan.

The manufacturers' complaint clashes head on with Western Canada's farming interests. Japan has been one of the largest cash-paying customers for Canada's hard wheat; and in spite of increased imports from Japan, exports from Canada to Japan are still much larger than imports.

This favorable trade balance poses

First-Quarter Profits Soar Above Last Year

Textile-mill profits were probably better in the first quarter of 1959 than in any quarter since 1951, according to late operating statements.

Six companies, accounting for 11% of total industry sales, averaged 4% net on sales for the first three months of this year, compared to an average of 1.9% net on sales in the first quarter of 1958.

Burlington, Dan River, James Lees, Kendall, Mohasco, and Riegel—three weavers, two carpet manufacturers, and one weaver-knitter—together had total sales of $331,342,507 in the first quarter, almost 17% above the $284,235,898 in the first quarter of last year.

Earnings after taxes were $13,457,153, up 136% over the $5,655,705 earned in the first quarter of 1958.

•

However, this profits picture is influenced by Mohasco's tax-free position.

With a tax-loss carry-over that eliminated income tax, Mohasco turned in a thumping 12.0% net on sales in the first quarter of this year, compared to 3.5% in the first quarter of 1958.

With Mohasco omitted, the other five companies averaged 3.3% net on sales in the first 1959 quarter, compared to 1.8% in the first 1958 quarter. That still amounts to about an 83% increase in net profit this year over last year.

•

Here's how operations ran in the first quarter for the six companies:

	1959	1958
Burlington		
Sales	$195,105,000	$162,485,000
Net	5,865,000	2,146,000
Net % of sales	3.0	1.3
Dan River		
Sales	$42,677,430	$40,631,125
Net	1,251,287	1,247,668
Net % of sales	2.9	3.0
James Lees		
Sales	$19,653,607	$16,150,537
Net	1,290,686	348,680
Net % of sales	6.5	2.1
Kendall Co.		
Sales	$25,896,000	$23,674,000
Net	857,000	673,000
Net % of sales	3.3	2.8
Mohasco		
Sales	$25,783,983	$22,211,411
Net	3,114,829	785,590
Net % of sales	12.0	3.5

Riegel		
Sales	$22,226,494	$19,073,825
Net	1,078,331	454,767
Net % of sales	4.8	2.3
Six-company totals		
Sales	$331,342,507	$284,235,898
Net	13,457,153	5,655,705
Net % of sales	4.0	1.9

Pres. Eisenhower Appoints Committee To Study Textiles

WASHINGTON—The White House last month agreed to set up a special sub-Cabinet-level committee to investigate the economic problems of domestic textile mills and make specific recommendations to the next session of Congress in January.

The move was suggested by three New England governors, Furcolo of Mass., Powell of N. H., and Del Sesto of R. I. The committee will be made up of assistant secretaries of State, Commerce, Defense, Agriculture, Treasury, and Labor, and the President's Council on Foreign Economic Policy.

The group will sponsor an offshoot advisory group representing "management, labor, and the public," and will report to Commerce Secretary Strauss.

In setting up the committee, President Eisenhower wrote the three governors that he believes there is no single solution to the textile industry's problems. He added that agriculture price-support adjustments in the works should equalize material costs for mills and that New England's specific economic hardships would be eased by federal-aid programs.

Russia's Production Up

MOSCOW—The new Seven-Year Plan for textile production got off to a good start in the first quarter of this year, the Russians say. Quotas were met in cotton, wool, linen, and silk fabrics.

The Central Statistical Board reported these figures:

- **Cotton fabrics**—1.1-billion square meters, up 4% from the first quarter of last year.
- **Wool fabrics**—101-million square meters, 7% above last year.
- **Linen fabrics**—118-million square meters, 9% above last year.
- **Silk fabrics**—176-million square meters, 2% above last year.

That amounts to a total production increase of about 4% in the first quarter of this year over the first quarter of 1958.

Comparison with the increase in the U.S. probably has little, if any, meaning, since in the U.S. early 1958 was a period of sharply declining production in a recession year and 1959 is a come-back year. But in the first quarter of 1959 U.S. production ran about 11% above production in the same period of 1958—nearly triple the U.S.S.R. improvement.

a political problem for the textile and apparel industries.

A spokesman for the Canadian Apparel and Textile Manufacturers' Association said **the Japanese can undercut Canadian prices at any level by 25% to 50%.**

One Winnipeg retailer said he can buy men's suits with two pairs of trousers from Japan at $20 and that in the last two years Japanese manufacturers have learned how to compete with Canadians in style, fabric, quality, and sizing.

Japanese blouses are sold here at $6.08 a doz., compared to local manufacturers' price of $19.30 a doz. A Canadian-made children's 100% nylon snow suit costs the retailer about $76.80 per doz., while similar rayon suits from Japan cost $16.75 a doz.

Cotton-Gin Practices Increase Mill Costs

Bad ginning practices of cotton are increasing mill costs 2½¢ per pound of cloth, the Dept. of Agriculture says.

Damaging practices include drying and cleaning at the gin to raise the grade and increase the price to the grower. But they result in a greater percentage of short fibers, which increase waste and ends down in spinning.

U. S. and Russia To Show Fashions

The U. S. and Russia will exhibit fabrics, garments, and fashions to each other this summer.

From July 25 till Sept. 4, the U. S. will exhibit in Moscow a large collection of clothing, much of it modeled, to illustrate American dress for different purposes and climates, the international flavor of American dress resulting from the many nationalities in the U. S., and the levels of price that a normal trend-setting dress goes through in the U. S. market.

On July 28, the Russians will exhibit Russian fashions to Americans at the Coliseum in New York City.

Cuba Cuts Hours, Ups Pay

HAVANA—Cuba's textile mills cut working hours from eight to six a day and raised pay 8% last month. The moves add $2-million to annual mill costs.

Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

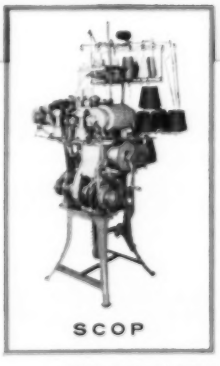
	Latest Month	Previous Month	Year Ago
Textile World's Index (1954=100)	**115**	**114**	**97**
Employment (thousands) B.L.S.	959.8	957.9	928.0
Production Workers (thousands) B.L.S.	869.8	866.8	837.2
Weekly Earnings B.L.S.	$63.43	$63.43	$54.90
Hourly Earnings B.L.S.	$1.57	$1.57	$1.50
Weekly Hours Worked B.L.S.	40.4	40.4	36.6
Production Index (1947-49=100) F.R.B.	113	113	94
Wholesale Price Index (1947-49=100) B.L.S.	94.1	93.9	93.7
Manufacturers' Sales (million $) Commerce	1,214	1,140	999
Manufacturers' Inventories (million $) Commerce	2,462	2,476	2,627
Inventories-to-Sales Ratio	2.03	2.17	2.63
Exports (million $) Commerce	93.4	71.0	132.2
Imports (million $) Commerce	104.4	80.9	74.3
Stock Price Index (1941-43=10) Standard & Poor's	28.01	27.34	20.42
Failures (number) Dun & Bradstreet	4	11	8

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947-49=100) F.R.B.	149	147	126
Consumer Price Index (1947-49=100) B.L.S.	123.7	123.7	123.3
Wholesale Price Index (1947-49=100) B.L.S.	128.3	128.1	119.3
Population (millions) Census	173.9	173.6	170.7
Unemployment (millions) Census	3.6	4.4	5.1
Employment (millions) Census	65.0	63.8	62.9
Personal Income (billion $) Commerce	372.7	369.5	349.7

For more data, circle A-1 on Reader Service Card →

QUALITY CONSCIOUS



Individuals continue to purchase socks knitted on Hemphill Banner SCOP machines. • The combination of patterns and colors which can be produced on the *proven* SCOP Machine make these fabrics particularly appealing. • Fully automatic, the SCOP knits complete, solid color overplaid argyles and will accommodate up to eight clear solid colors to a course.

WILDMAN JACQUARD

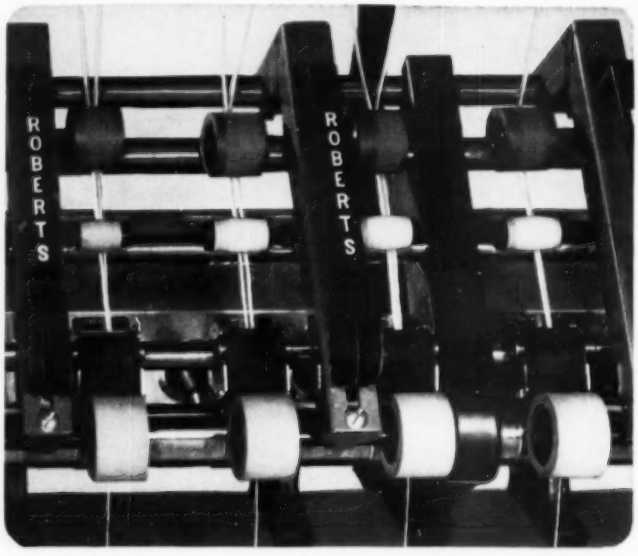
WILDMAN JACQUARD CO. • 1210 Stanbridge Street • Norristown, Pennsylvania • Manufacturers of HEMPHILL BANNER Knitting Machines

a subsidiary of Draper Corporation, Hopedale, Mass.

For more data, circle A-1 on Reader Service Card

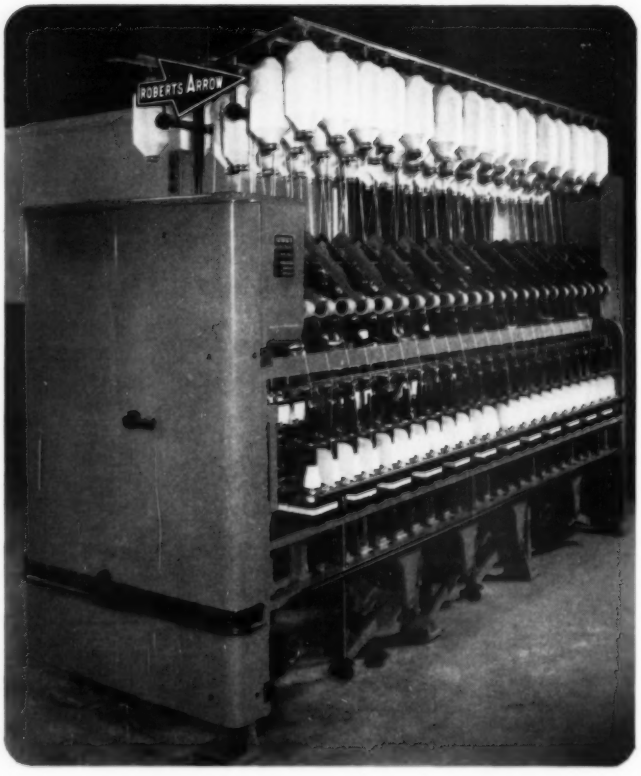
ROBERTS ARROW *LONG FIBER* SPINNING

- Any Fiber or Blend Synthetic or Natural
- Any Staple Length From 1½ to 8 Inches
- No Roll Setting Changes Needed at Any Time
- All Ball Bearing Construction For Smooth Operation



WITH ROBERTS *PermaSet* DRAFTING

ROBERTS ARROW



WM-2 ARROW *ShortFlo*

Rugged Chassis with Ball Bearings Throughout

Unitized Sectional Construction

Four-Roll Double Apron Drafting System

For Long-Staple Spinning, 100% or Blended

Drafts: 20 to 25 for Wool and Blends
25 to 50 for Synthetics and Blends

Front Roll Pressures from 90 to 120 pounds

UnitVac Power Suction Cleaning with Individual Removable Flutes

Roberts AeroCreel Handles Large-Package Roving

Simplified Reverse Twist Arrangement

Completely Adjustable Draft, Lay, and Twist Constants

One Master Set of Gears for All Changes

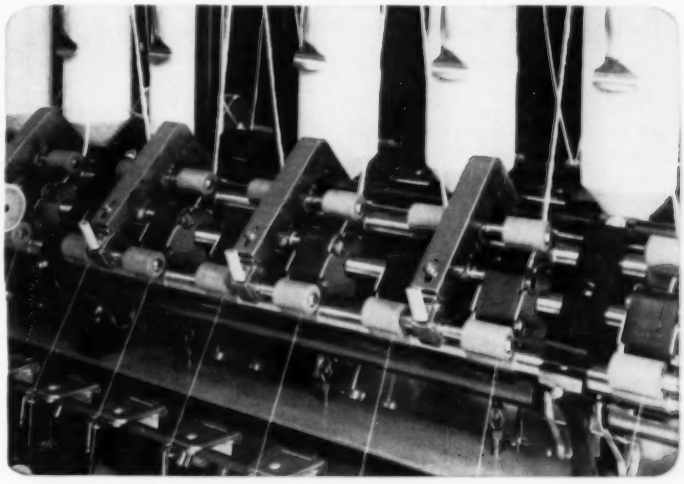
Actual mill tests have proved that the ARROW WM-2 Worsted Frame gives higher quality yarns with fewer ends down and more even running at higher drafts and higher front-roll and spindle speeds.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

THE MOST SENSIBLE ANSWER TO GADGET-FREE TOP ROLL SUSPENSION

ROBERTS *PosiWate* SUSPENSION SYSTEM

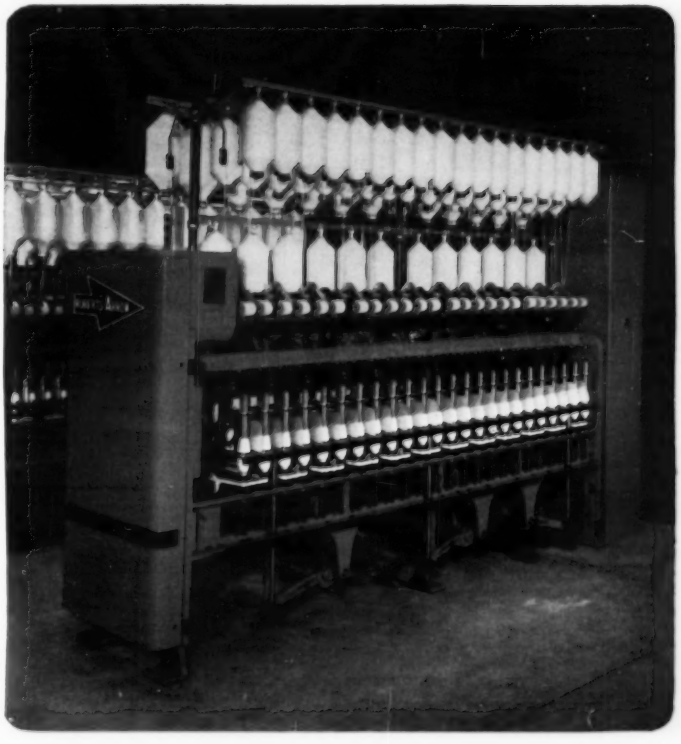
Elegantly simple, the Roberts PosiWate Top Roll Suspension System is completely free of hooks, unpredictable short springs and other gadgets. PosiWate recovers the best features of positive weighting and weight distribution used and proven in several million spindles insuring uniform performance from spindle to spindle.



A FEATURE OF

ROBERTS ARROW

ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

- PosiWate Top Roll Suspension
- UnaRing Balloon Control
- EvenGrip Fluted Bottom Rolls
- Roberts Supreme Ball Bearing Spindles
- Double-Apron High Draft System
- UnitVac Power-Suction Cleaning
- Roberts All-Ball-Bearing Head
- Unitized Sectional Frame
- AeroCreel with Latch-Type Bobbin Holders
- Flexibility For Cotton And Synthetics

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Puebla, Pue.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

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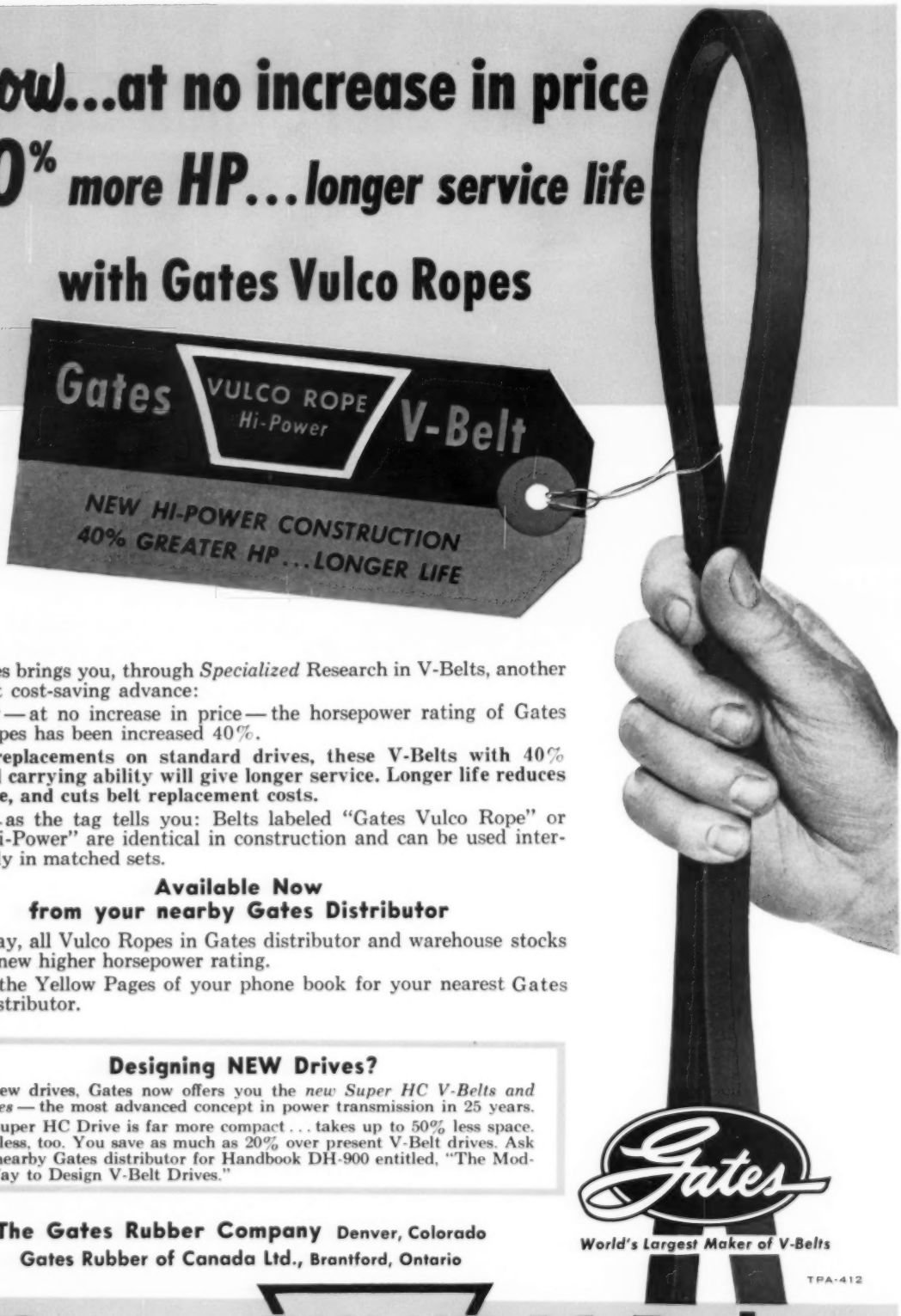
Now...at no increase in price

40% more HP...longer service life

with Gates Vulco Ropes



Gates brings you, through *Specialized* Research in V-Belts, another important cost-saving advance:

Now — at no increase in price — the horsepower rating of Gates Vulco Ropes has been increased 40%.

As replacements on standard drives, these V-Belts with 40% more load carrying ability will give longer service. Longer life reduces down-time, and cuts belt replacement costs.

And as the tag tells you: Belts labeled "Gates Vulco Rope" or "Gates Hi-Power" are identical in construction and can be used interchangeably in matched sets.

Available Now from your nearby Gates Distributor

Today, all Vulco Ropes in Gates distributor and warehouse stocks have the new higher horsepower rating.

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Designing NEW Drives?

For new drives, Gates now offers you the *new Super HC V-Belts and Sheaves* — the most advanced concept in power transmission in 25 years. The Super HC Drive is far more compact . . . takes up to 50% less space. Costs less, too. You save as much as 20% over present V-Belt drives. Ask your nearby Gates distributor for Handbook DH-900 entitled, "The Modern Way to Design V-Belt Drives."

The Gates Rubber Company Denver, Colorado
Gates Rubber of Canada Ltd., Brantford, Ontario

Gates
World's Largest Maker of V-Belts

TPA-412

Gates VULCO ROPE Hi-Power V-Belts

Guaranteed

Let This Front Roll pay EXTRA DIVIDENDS on your spinning...

Enduring dependability is a designed-in quality of every Dixon Engineered Changeover, best illustrated by our patented, self-aligning front roll. Here indeed is superior design which will produce superior performance and *fast pay-back* in your mill, as it has in other competition-conscious mills* throughout the country.

1. Dixon Front Roll bearings are made from high carbon steel, races and balls hardened, ground, and polished. Here's top quality that can carry a real GUARANTEE.
2. Dixon Front Roll deep groove bearing is pre-lubed — NEVER NEEDS RELUBRICATION!
3. Dixon Front Roll contact-seals hug the races—stop lint, hold grease.
4. In Dixon Front Roll, the inner bearing race rotates — travels less distance — bearings last longer.
5. Dixon Front Roll cots are heavy-walled — give maximum load-carrying ability, permanent bond to arbor, and additional cushioning.
6. Dixon Front Roll cots are synchronized. They're easier to strip, and need no special buffing or repair equipment.

Best of all, the Dixon Front Roll is the quickest and lowest cost way to start your full Saddle Guide Changeover program. By installing self-aligning Front Rolls and Saddles and eliminating front cap bars, you remove immediately a major source of lubrication and cleaning. You reduce ends down and improve evenness. You're also well on your way to a complete oil-free and cap-bar-free center-suspension changeover.

Ask for our detailed report showing how an actual Dixon Engineered Changeover installation paid for itself in 25 months and is now saving $1.50 per spindle per year. **Dixon Corporation, Bristol, Rhode Island.** Southern Sales: Dunson & New, Inc.: Box 9202, Greensboro, N. C.; Box 321, Greenville, S. C.; Box 445, West Point, Ga.

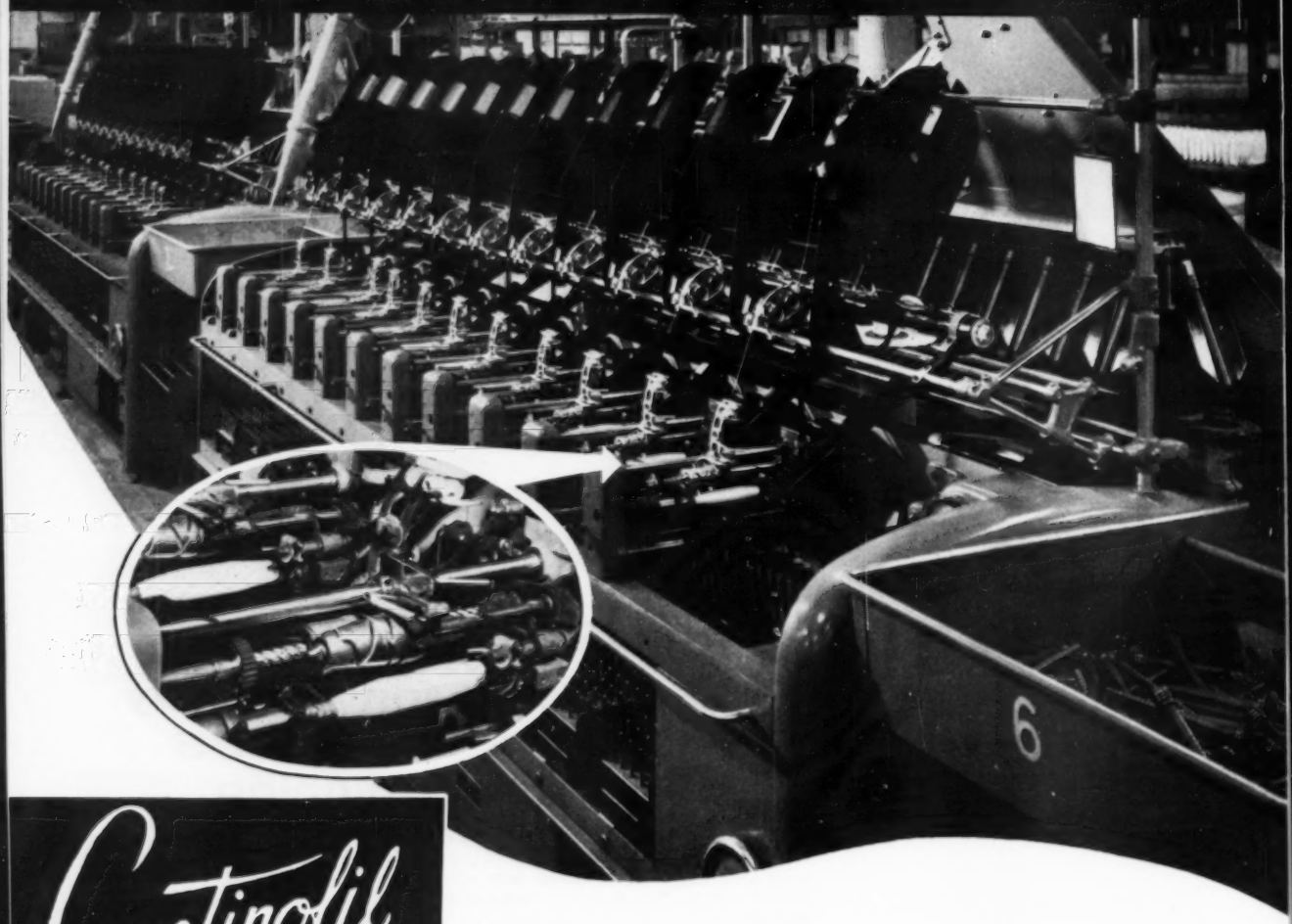
* To mention a few

Mill	Spindles	System
American & Efird Mills, Inc.	31,078	Double Apron Casablancas
Johnston Mfg. Co.	20,756	Double Apron Casablancas
Carlton Mills	100,504	Double Apron Casablancas
Chicopee Manufacturing Corp.	272,032	Double Apron Roth and Casablancas

Dixon

Engineered devices for weighting and guiding top rolls since 1876

ONLY INDUSTRY-WIDE ACCEPTED HIGH SPEED AUTOMATIC QUILLER



Continofil AUTOCOPSER *with Individual Spindle Pinboarding*

features that Produce Better Quality at Lower Cost

1. Interlocking wind permits larger bobbin diameters without sloughing.
2. Larger bobbins lower cost per pound—reduce all indirect labor from quiller to loom.
3. Proved individual spindle pinboarding.
4. Compensating tension gives constant tension, reducing danger of stretched filling.
5. Magazine fillers can load quills in loom exactly as they come from cones, reducing possibility of bands when weaving colored yarns.
6. No piece quills.

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THE TERRELL MACHINE CO., INC.

CHARLOTTE, N. C.

Aberfoyle Mfg. Co., Philadelphia, Pa., has moved its general offices to East Gastonia, N. C. The company expects to move its executive offices there.

Avondale Mills, Sylacauga, Ala., has acquired the nonwoven operation of Buck-Felt, Inc., Siluria. By this purchase Avondale expects to increase the present production of its Plastavon Dept. by 50% by adding a random-webber operation to the department's carded operation.

Belmont Throwing Corp., Belmont, N. C., has announced that a $400,000 modernization program that will add 40% to the company's productive capacity is nearing completion. The modernization includes $300,000 for the installation and replacement of auxiliary machinery and $100,000 for an air-conditioning system.

Cannon Mills' plant in Central, S. C., is installing air conditioning in the spinning and carding departments. More looms are also being installed.

Caron Spinning Co., Rochelle, Ill., has formed Carolac N. V., a Netherlands corporation to process Orlon and other man-made fibers for the European Common Market and free-trade countries. The manufacturing plant will be in Dordrecht, Holland, on a site adjoining the Du Pont Orlon plant. It is scheduled for completion by the end of this year.

Coats & Clark, Inc., New York, N. Y., has opened a new branch office and warehouse at 17-01 Pollitt Drive, Fair Lawn, N. J. The office will replace the company's New York City branch and will handle distribution for both industrial and domestic products.

Cole-Gunn Hosiery Mills, Inc., Yanceyville, N. C., has started a $400,000 expansion program. Plans include building a 4,500-sq.-ft. addition and buying additional seamless-hosiery machines.

Consolidated Knitting Mills, Inc., Darlington, S. C., is moving to Lincolnton, N. C.

Elastic Corp., Hickory, N. C., will establish a $200,000 plant in Chattanooga, Tenn., and will produce elastic yarn for hosiery and weaving.

Fulton Cotton Mills, Atlanta, Ga., has bought controlling interest in Continental Gin Co., Birmingham, Ala.

Georgia Textile Manufacturers Association, Inc., is the new name of the Cotton Manufacturers Association of Georgia.

Glas-Kraft, Inc., Lonsdale, R. I., has bought the former Slatersville finishing plants at North Smithfield, R. I. The purchase consists of 115 acres of land, 19 buildings, and 300 acres of water rights. The Kendall Co., Boston, Mass., was the former owner of the plants.

Hanes Hosiery Mills Co., Winston-Salem, N.C., has approved plans for a $27½-million expansion program that will double the company's production from 50-million pairs of seamless stockings annually to 100-million pairs. The first step of the program will be the construction of a one-story plant near Winston-Salem. This new building with all equipment will cost $12-million. It is scheduled for operation in 1960. An additional unit with capacity for 2,000 additional machines will be built later. Hanes will complete installation of 600 new machines in its present plant by the end of this year.

Imperial Yarn Mills, Inc., Belmont, N. C., has been sold. The name will be retained but the mill will be operated under new management.

Lee Hosiery Mill, Landrum, S. C., is closing. The plant produced full-fashioned nylon hosiery.

Linen Thread Jute Mills, Inc., Paterson, N. J., has been formed. The company has acquired the former Marshall Mill, Kearney, N. J., previously operated by Linen Thread Co. The new company will continue the business in jute carpet-backing yarn, electrical yarn, and twine.

Long Shoals Cotton Mills, Inc., Long Shoals, N. C., has been destroyed by fire. The plant employed 197 people on a three-shift, six-day basis.

Mount Airy Hosiery, Inc., Mount Airy, N. C., is building a plant and will employ between 200 and 300 people.

National Automotive Fibres, Inc., Detroit, Mich., has changed its name to NAFI Corp.

North Star Woolen Co., Sanford, Me., has merged with Maine Spinning Co., Showhegan, a division of Ames Textile Corp., Lowell, Mass. Both companies will continue at their present locations.

Peerless Hosiery Co., North Wilkesboro, N. C., is planning to build a 7,000-sq.-ft. addition.

Springs Cotton Mills, Inc., Lancaster, S. C., has started building the first half of a 160x800-ft. addition to its finishing plant. The company expects to have this first unit in operation by Sept. 15. This is part of a $5-million expansion program.

J. P. Stevens & Co., Inc., Greenville, S. C., is building a half-million-dollar addition at the Hannah Pickett plant, Rockingham, N. C., that will be completed about the end of July. The company has also brought Green River Mills, Tuxedo, N. C., and will reopen the mill and operate it as a member of the Synthetics Div.

Superior Yarn Mills, Mount Holly, N. C., is planning to close its plant at Long Island, N. C., in October. The company's plant at Monbo will also close at a later date. The mills are closing because of a dam construction at Cowan's Ford, which will back water over the area.

Sweetree Mills, Inc., Cherryville, N. C., has started a $100,000 expansion program. The program includes a 10,500-sq.-ft. addition.

Valley Mills, Inc., Columbiana,

CONTINUED ON PAGE 146

CALENDAR

June

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 3

Material Handling Institute's Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

ASME, semi-annual meeting, The Chase and Park Plaza Hotels, St. Louis, Mo., June 14 to 18

Southern Textile Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 18 to 20

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 21 to 26

July

1959 Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 13 to 17

September

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 2

Fiber Society, Inc., fall meeting, Princeton, N. J., Sept. 11 & 12

3rd International Textile Exposition, Milan, Italy, Sept. 12 to 21

AATCC, South-Central Section, Hotel Patten, Chattanooga, Tenn., Sept. 19

Northern Textile Association, annual meeting, Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 23 & 24

AATCC, Southeastern Section, Ida Cason Callaway Gardens, Pine Mountain, Ga., Sept. 25

AATCC, Western New England Section, Blake's Restaurant, Springfield, Mass., Sept. 25

AATCC, Niagara Frontier Section, Niagara Falls, Ont., Canada, Sept. 25

AATCC, Piedmont Section, Barringer Hotel, Charlotte, N. C., Sept. 25 & 26

American Gas Association, Textile Processing Symposium, Sedgefield Inn, Greensboro, N. C., Sept. 28 & 29

October

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 7

Textile Quality Control Association, fall meeting, Grove Park Inn, Asheville, N. C., Oct. 1 & 2

Textile Operating Executives of Georgia, fall meeting (slashing and weaving), Hightower Textile Building, Georgia Institute of Technology, Atlanta, Ga., Oct. 3

Chemical-Fnishing Conference, sponsored by the National Cotton Council, Mayflower Hotel, Washington, D. C., Oct. 7

N. C. Textile Manufacturers Association, annual convention, Carolina Hotel, Pinehurst, N. C., Oct. 8 & 9

Southern Textile Methods & Standards Association, fall meeting, Clemson House, Clemson, S. C., Oct. 8 & 9

AATCC, annual convention, Sheraton-Park and Shoreham Hotels, Washington, D. C., Oct. 8 to 10

North Carolina Textile Manufacturers Association, annual meeting, Carolina Hotel, Pinehurst, N. C., Oct 8 & 9

Alabama Textile Operating Executives, fall general meeting on carding and spinning problems, Langdon Hall, Auburn, Ala., Oct. 10

AATCC, Northern New England Section, Lexington Inn, Lexington, Mass., Oct. 16

Textile Education Foundation, Inc., annual meeting, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 17

AATCC, Mid-west Section, Bismarck Hotel, Chicago, Ill., Oct. 24

November

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 4

December

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 2

1960

April

American Cotton Manufacturers Institute, annual meeting, Americana Hotel, Bar Harbor, Fla., April 6 to 9

May

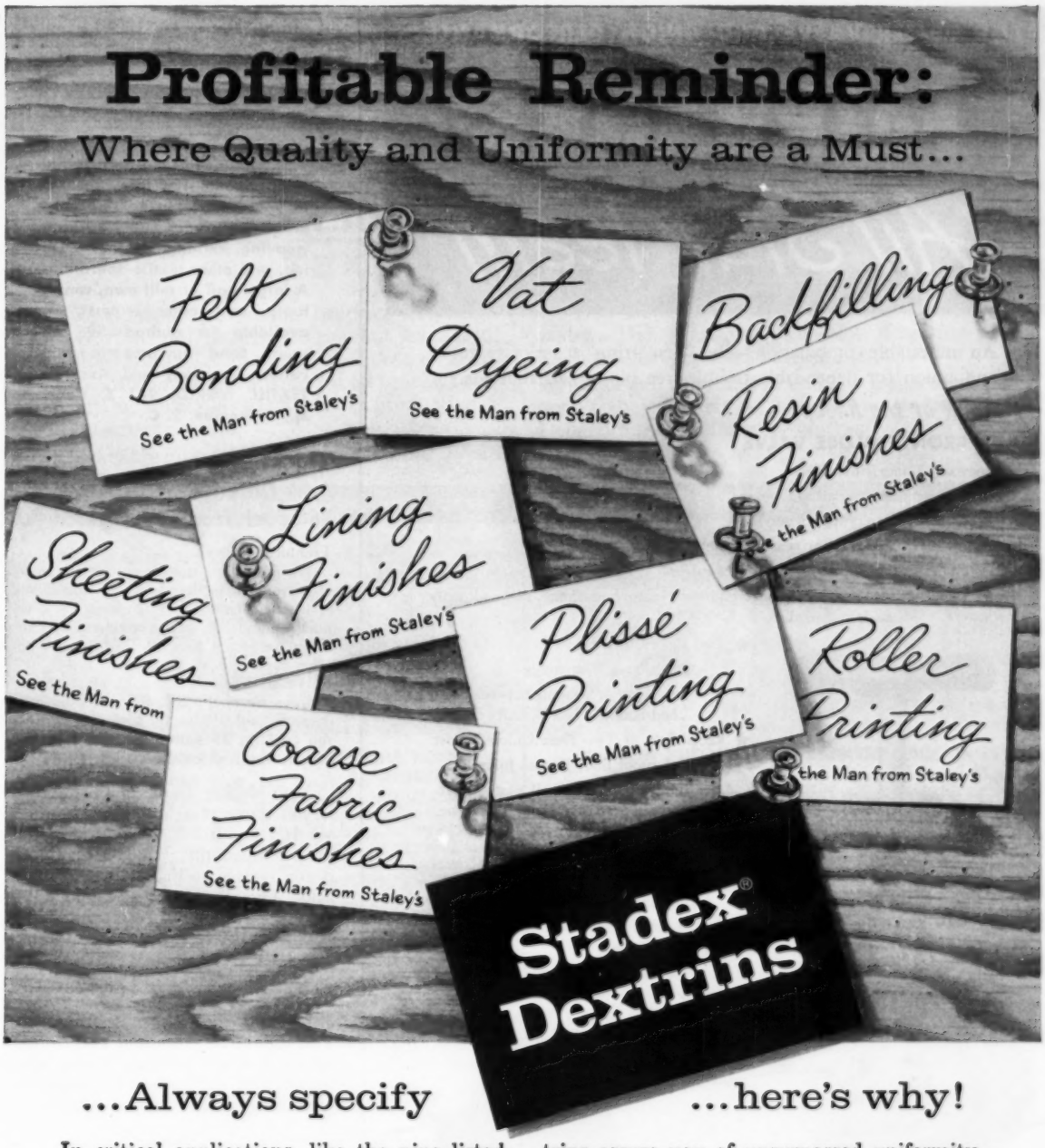
American Textile Machinery Exhibition, Atlantic City, N. J., May 23 to 27

June

Southern Textile Association, annual convention, Grove Park Inn, Asheville, N. C., June 23 to 25

October

21st Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 3 to 7



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In critical applications, like the nine listed above, variables must be reduced to the minimum if you are to consistently get uniform quality results. And there's no better way to insure uniformity throughout your operations than with Stadex Dextrins.

How is this possible? Staley's has developed an exclusive new process for manufacturing dextrins. And because of this new process, Stadex Dextrins possess a *degree of uniformity not found in other dextrins.*

In printing, finishing, bonding, dyeing—whatever your application . . . whether your requirements call for white or canary dextrins or British gums, remember this: Stadex Dextrins assure you of unsurpassed uniformity, highest quality and minimum color in a complete line *tailor-made* to meet your exact specifications.

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★ Renewable Composition Disc

Perfect sealing at all times—

A disc for every type of service—

#50—a hard disc for general usage

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★ Two Piece Union Bonnet
—Quick, easy disassembly
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★ Radial Seat of Two Piece Union Bonnet
—Leak-proof Body Bonnet Joint
—Rigid alignment of all parts—guaranteed perfect seating all the time.

DART UNION

★ Ground Ball Joint having extra wide seating surfaces

★ Two Bronze Seats, non-corroding, on both sides of the seat

★ Leak-proof without excessive torque because of true bearing surfaces

★ High-test air-refined malleable iron body will not stretch, practically unbreakable.

THE **Fairbanks** COMPANY

393 LAFAYETTE STREET · NEW YORK 3, N. Y.

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QUESTIONS & ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Add Different Acid To Level Wool Dyeings

Technical Editor:

We are having trouble getting level dyeings from skein to skein on wool. We scour the skeins at 125° F. with 2% owg. soda ash and 3% owg. nonionic detergent. Then we give a rinse at 130° F. and another rinse at 150° F.

We start our dyeing cold with 5% anhydrous Glauber's salt, 0.5% Sepon E.S., dyestuff, and 5% acetic acid (56%). We run cold for 15 mins. and then raise the bath to the boil and boil 1 hr. (1444)

Your dyeing results may improve if you scour at a lower temperature, say 105 to 110° F., and rinse at the same temperature. Then it may help if you replace acetic acid with formic acid. Try 5% formic acid and 20% Glauber's salt in a dyebath set at 120° F.; raise to the boil in 30 mins. Toward the end of the dyeing, it may be necessary to add 1 to 2% owg. sulfuric acid to get a good exhaust.

Dyestuff choice also is important. You should use the most-level-dyeing colors that will produce results consistent with the fastness requirements of your customers.

Convert Carpet Scraps Into Useful Items

Technical Editor:

How can we convert short lengths of tufted carpeting into useful articles such as auto floor mats? (1436)

You can produce mats of this type very simply. The mat base is a conventional reclaimed-rubber product to which has been fastened a light jute-backed tufted carpeting.

Either a solvent-based adhesive or a latex emulsion can be used to get a secure bond between the carpet and

ND FACTS

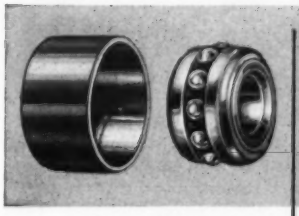
HERE'S NEW DEPARTURE'S COMPLETE LINE OF SEALED BALL BEARINGS FOR TEXTILE MACHINERY

New Departure textile bearings are made with integral closures to prevent leakage of lubricant and contamination of goods. All are smooth running, low friction ball bearings permitting higher speeds for faster production—longer service life.

Many are lubricated and sealed for life. Others use New Departure's Injection-Relubrication system. This permits revitalization of bearing lubricant for increased bearing life.

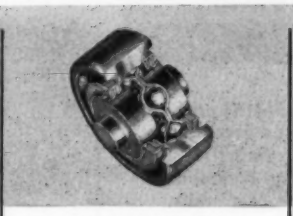
Write for full information on New Departure textile ball bearings, or call your New Departure sales engineer. Naturally, there's no obligation.

SEND FOR TEXTILE BALL-BEARING CATALOG TEX-1, NEW DEPARTURE, BRISTOL, CONN.



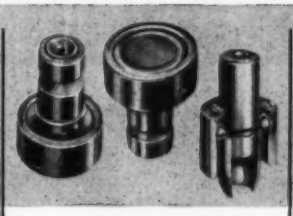
SPINDLE BEARINGS

. . . Cylindrical outer race permits removal of spindle from bolster without removing bolster from rail. Used for step bearings, but also used in high-speed spindle applications.



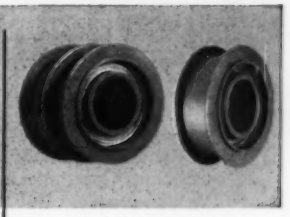
TREADLE ROLL BEARINGS

. . . permanently lubricated for long service. Designed to eliminate sparking. Double seals prevent leakage of lubricant, keep out dirt and lint.



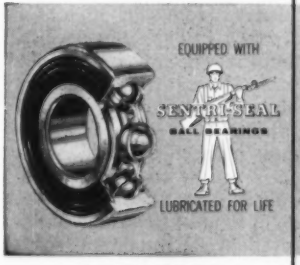
TENSION PULLEY BEARINGS

. . . available for both vertical mounting of idler or tension pulleys or horizontal mounting of tape tension pulleys.



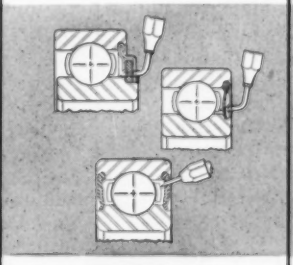
SHEAVE BEARINGS

. . . for automatic looms. Self-sealing assures protection for textiles, eliminates relubrication problem. Designed to permit nesting in gangs on harness sheave supporting shaft.



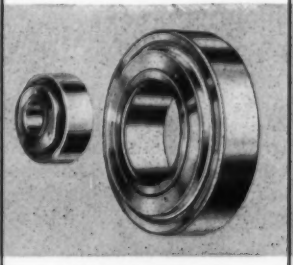
SENTRI-SEALS

. . . keep lubricant *in*, seal *out* dust, dirt and moisture for life. Sentri-Seals are synthetic rubber with spring steel rings molded in. Available in a wide variety of ball bearings.



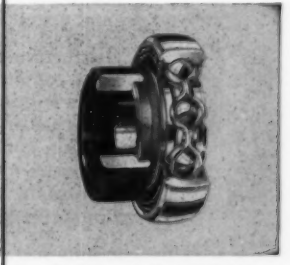
INJECTION-RELUBRICATION SYSTEM

Hollow needle and metering oiler extend grease life in bearings for many months in high-speed, long-service applications.



FELT SEAL

. . . annular ball bearings are protected from dirt, retain lubricant by integral felt closures. Complete line from 5mm. to 2¾" bore. Relubricated by injection-relubrication.



ADAPTER BEARINGS

. . . easily applied to shafts; positive lock. Pre-lubricated, sealed. For moderate loads and speeds. Spherical or cylindrical O.D. for shafts ½" to 2 15/16" dia.

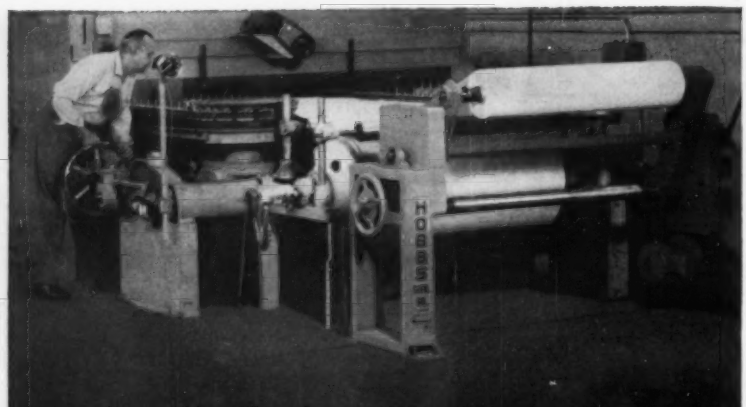
Replacement ball bearings available through United Motors System and its Independent Bearing Distributors

ND NEW DEPARTURE

DIVISION OF GENERAL MOTORS, BRISTOL, CONN.

NOTHING ROLLS LIKE A BALL

For more data, circle A-9 on Reader Service Card



BUTTERWORTH Pioneers With

HOBBS-ALQUIST BATCHER, or WEB WINDER

The photograph herewith shows a Hobbs-Alquist Batcher, or Web Winder, on the end of a tenter dryer in the experimental laboratory of H. W. Butterworth & Sons Company, Bethayres, Pa.—a division of Van Norman Industries, Inc. The equipment is used to process webs of woven textiles, plastics, and paper and Mr. Stanley Brooks of Butterworth writes about the Hobbs-Alquist as follows:—

"We would be perfectly willing to go on record that the winder has performed very satisfactorily, under very critical conditions, during a program entailing the winding of a broad variety of webs of material of different composition and characteristics."

A distinctive feature of the Hobbs-Alquist is that it utilizes a center drive instead of a surface drive. This eliminates friction on the web, which is highly important when delicate or sensitive webs are involved. At the same time tension control is maintained through the peculiar characteristics of the Hobbs-Alquist motor, which senses the increase in torque as the roll builds up and slows down in direct proportion.

The unit shown here is one of 9 different types of web winders and unwinders manufactured by Hobbs — each for a different set of requirements. Somewhere in this range of equipment is the winder or unwinder you need — the machine which gives you MORE FOR YOUR MONEY. Tell us your problem and let us make recommendations, free of all obligations.

WINDERS • WINDING STANDS • HAND & POWER SHEARS
SLITTERS • AUTOMATIC CUTTERS • DIE PRESSES

HOBBS

EST. 1885

Manufacturing Company
60F Salisbury St., Worcester 5, Mass.
Branch Offices & Representatives in Irvington, N. J., Chicago, Cleveland, Greenville, S. C., Louisville, Toronto and other principal cities.

44-9

the rubber base. The adhesive should be brushed on both the base and the carpeting.

Place the carpeting in position on the rubber backing, and pass them both through a pair of heavy squeeze rolls such as a dyeing or finishing pad.

You can purchase adhesives either in emulsion form or in a solution that requires only air drying to cure satisfactorily.

Tricot Guide Bars Must Be Set Carefully

Technical Editor:

We are having trouble in setting the guide bars into the needles of our tricot machines. Can you tell us the best way to set the bars? (1443)

There are a number of ways to set guide bars. Here's one method that some mills find satisfactory:

Set the guide bars into the needles the depth of the hole in the guide. Where the guide is lapped over two or more needles, set the guides a little deeper.

If you raise or lower the needle bar for any reason, the guide bar should also be moved to conform to the original setting.

An incorrect swing through the needles by the guide bars can cause a lot of trouble. When the needle bar is raised, the swing must sometimes be lengthened.

When the guide bar swings through the needles, it must be clear of the threads and the needles. The move to put the threads under the beards must be completed before the guide bar starts to return through the needles.

The move may start as soon as the guides have cleared the needles to get to the position of the shift to the right or the left.

The space between the needles and the guides is usually checked after an adjustment, but the space when the guides are in front of the needle is frequently overlooked. Insufficient space here may cause pinholes and catch marks, and in extreme cases the guides may tip the needle enough to cause needle loading.

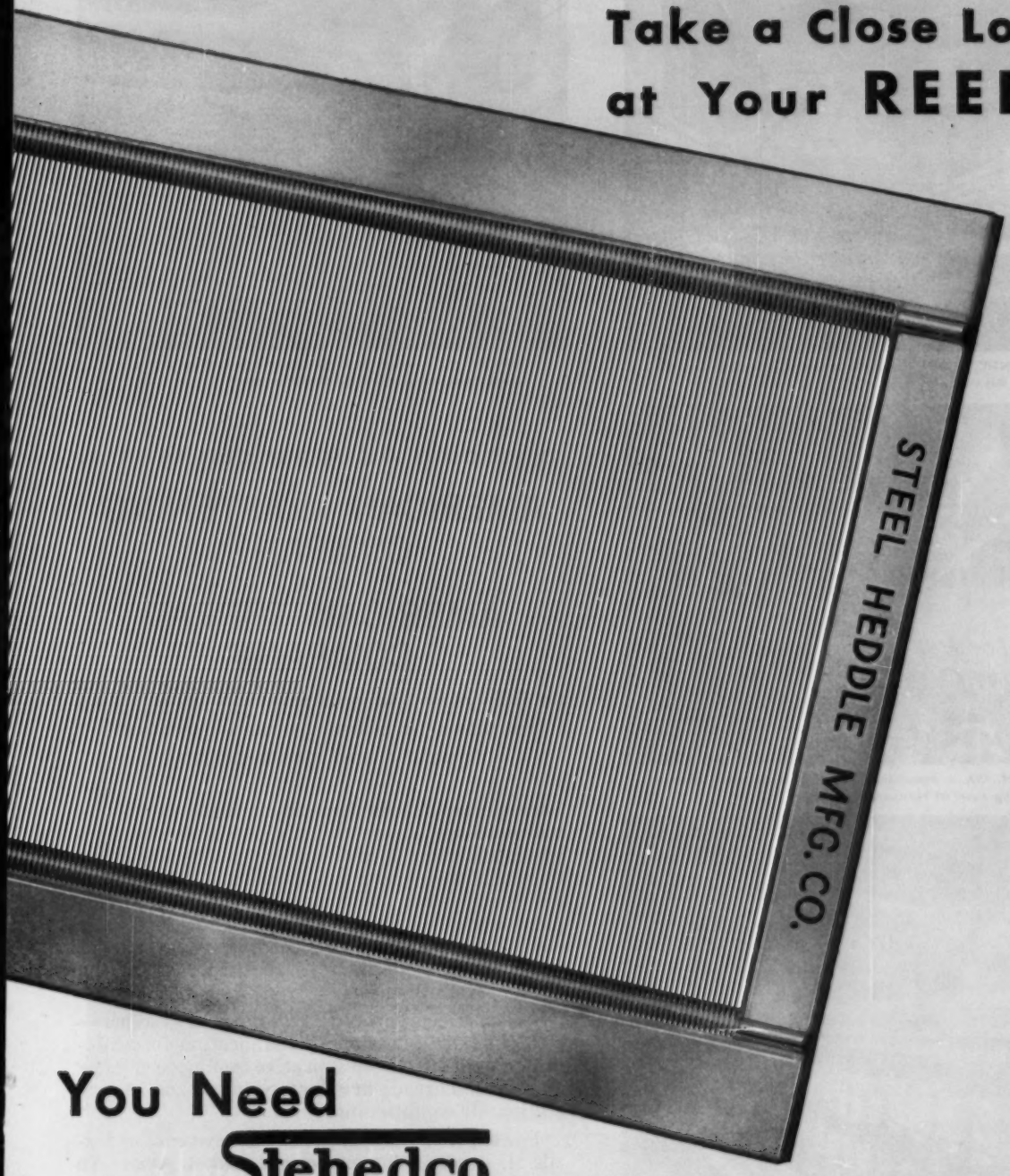
The length of the sweep may need to be increased and the position of the guides changed to cause the guides to function correctly. This adjustment is more frequently necessary on older machines. Too much space, however, can give as much trouble as too little.

Check the space between each guide bar. There should be no contact between the bars when they are shifting, and the threads must have clearance. In changing to heavier yarns, this space may have to be increased.

For more data, circle A-10 on Reader Service Card

For more data, circle A-11 on Reader Service Card →

Take a Close Look at Your REEDS



You Need Stehedco Quality

You need Stehedco Quality Reeds to weave quality cloth with greatest economy. Constructed of finest quality materials by master craftsmen, you can be sure of having reeds that will give you longer trouble-free service and better quality production than ordinary reeds. In addition you get better delivery on any quantity, consistent with their fine quality. Order Stehedco Quality Reeds and be assured of complete satisfaction.

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STEEL HEDDLE MFG. CO.
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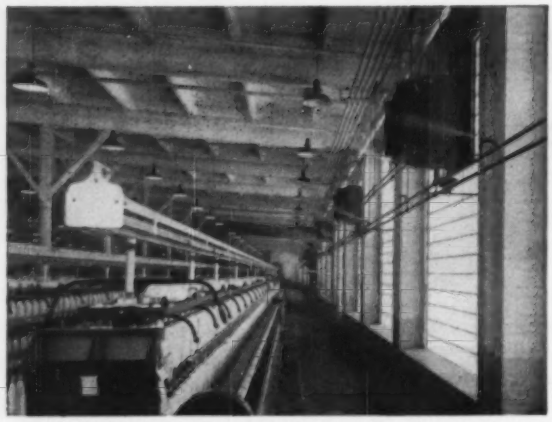
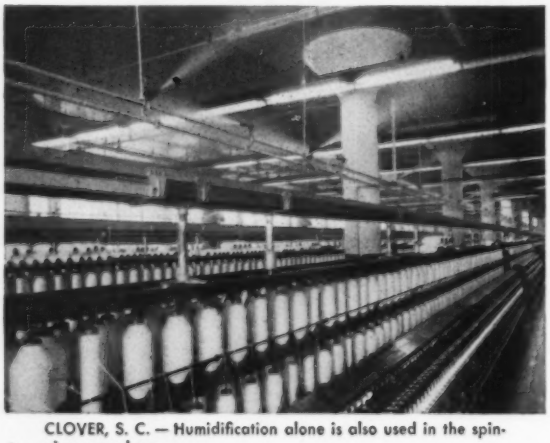
Other Plants and Offices: Granby, Quebec, Canada — Lawrence, Mass. — Greensboro, N. C. — Atlanta, Ga. — Textile Supply Co., Dallas, Texas — Albert R. Breen, Chicago, Ill.



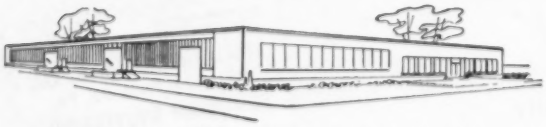
WILLIMANTIC, CONN. — Humidification with cooling was the choice in this mill.

DALTON, GA. — Amco Humidification with cooling was preferred for spinning operation at Dalton, too.

NEWNAN, GA. — Amco Humidification alone was selected for carding room at Newnan.



CLOVER, S. C. — Humidification alone is also used in the spinning room here.



Cleveland-Rowan Plant of American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

a leading All-American team...

AMERICAN MOISTENING COMPANY
and
AMERICAN THREAD COMPANY

A 65-year old association which has resulted in great gains in product quality and productivity

Correct yarn regain through maintenance of normal moisture content is only one of the benefits which American Thread has enjoyed as a result of the use of Amco humidification. Among the others are yarn numbers kept more even; increased output due to closer machine tolerances and less static electricity; improved product quality because of fewer thread imperfections, reduced dust and fly, more operator comfort.

Amco, of course, designs *all* types of systems — straight humidification; humidification in combination with ductless evaporative cooling, as used by American Thread; dry duct systems; and central station air conditioning.

For expert advice, backed by many years of textile air conditioning experience, call on Amco. An Amco engineer will be glad to suggest a solution to any air conditioning problem you may have. There is absolutely no obligation.

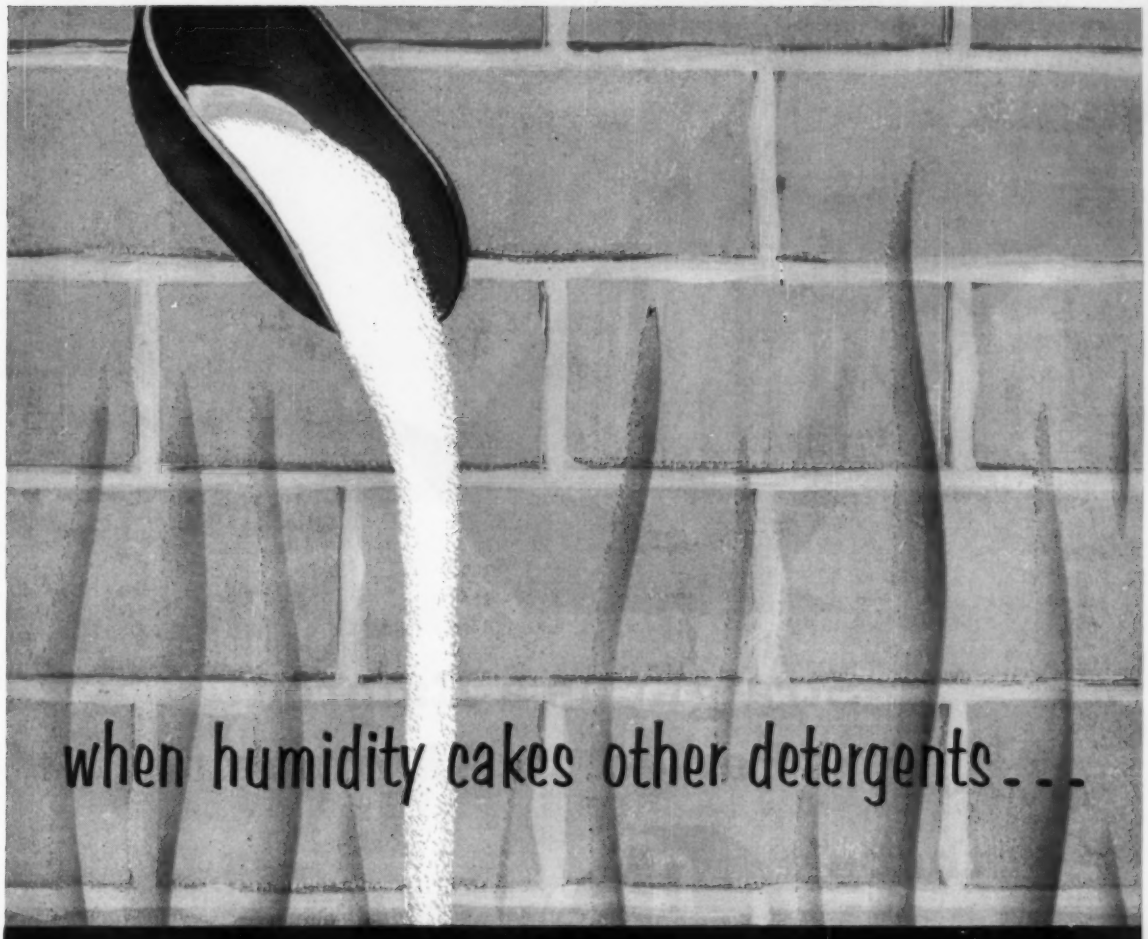
AMCO

SINCE 1888

AIR CONDITIONING EQUIPMENT

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA

BRANCHES: ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, CANADA



Nacconol DBX flows freely!

These super dense beads of spray-dried alkyl aryl sulfonate won't cake or lump up in storage. They'll pour from bag or drum . . . even under severely humid conditions . . . without having to be broken down.

NACCONOL DBX essentially eliminates dusting, too. So it's more pleasant . . . as well as faster . . . to handle.

Physical properties and chemical composition are the same, shipment after shipment, from coast-to-coast. You're always assured of 40% minimum active organic content and the same high wetting and detergent efficiency wherever and whenever you buy.

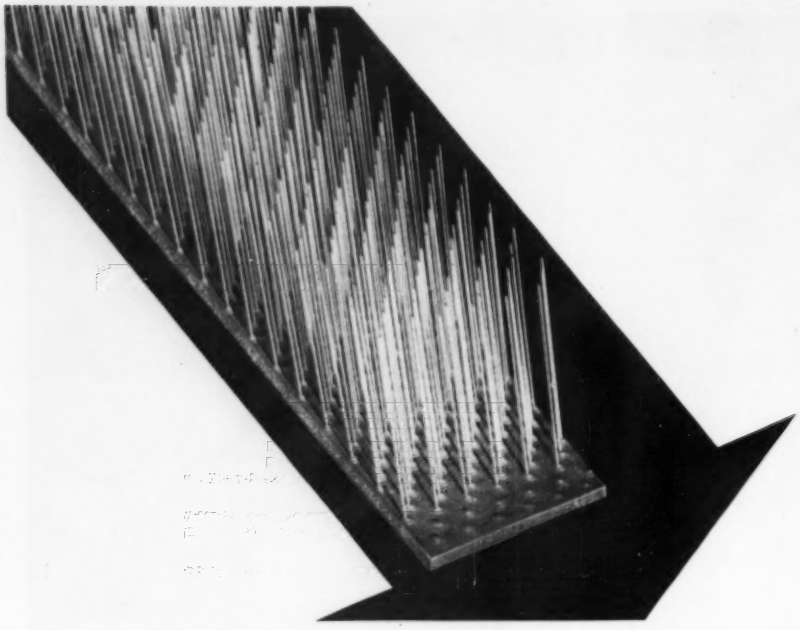
Other forms of NACCONOL for the textile industry include the top-selling liquid, NACCONOL SL . . . NACCONOL DB Dense Beads . . . and NACCONOL NR Flakes.

Samples and data available.

NATIONAL ANILINE DIVISION
40 RECTOR STREET, NEW YORK 6, N. Y.
Atlanta Boston Charlotte Chicago Greensboro Los Angeles
Philadelphia Portland, Ore. Providence San Francisco
In Canada: ALLIED CHEMICAL CANADA, LTD., 100 North Queen St., Toronto 14

Allied Chemical

For more data, circle A-13 on Reader Service Card



Straight as a Ramrod Perfect in Alignment—

that's Tuffer TRADE MARK

The carefully ground teeth of Tufferized Card Clothing are set with military precision in Tuffer foundation to suit the individual job.

These tough wires stand straight and firm as a ramrod, with just the proper flexibility, and with every point in exact position. And expert grinding keeps the points efficiently sharp for a long, long time.

Tuffer precision craftsmanship produces the consistently uniform Card Clothing you want for a smooth, even sliver with minimum variation.

You're sure of maximum production with Tuffer. For special problems, a Tuffer sales engineer with access to the accumulated manufacturing experience of more than 90 years, is always available.

TUFFER PRODUCTS

- Card Clothing for Woolen, Worsted, Cotton, Asbestos and Man-made Fibers
- Napper Clothing and Brushes
- Top Flats re-covered and extra sets loaned at all Plants
- Lickerins rewired at Southern Plants
- Hand Stripping Cards

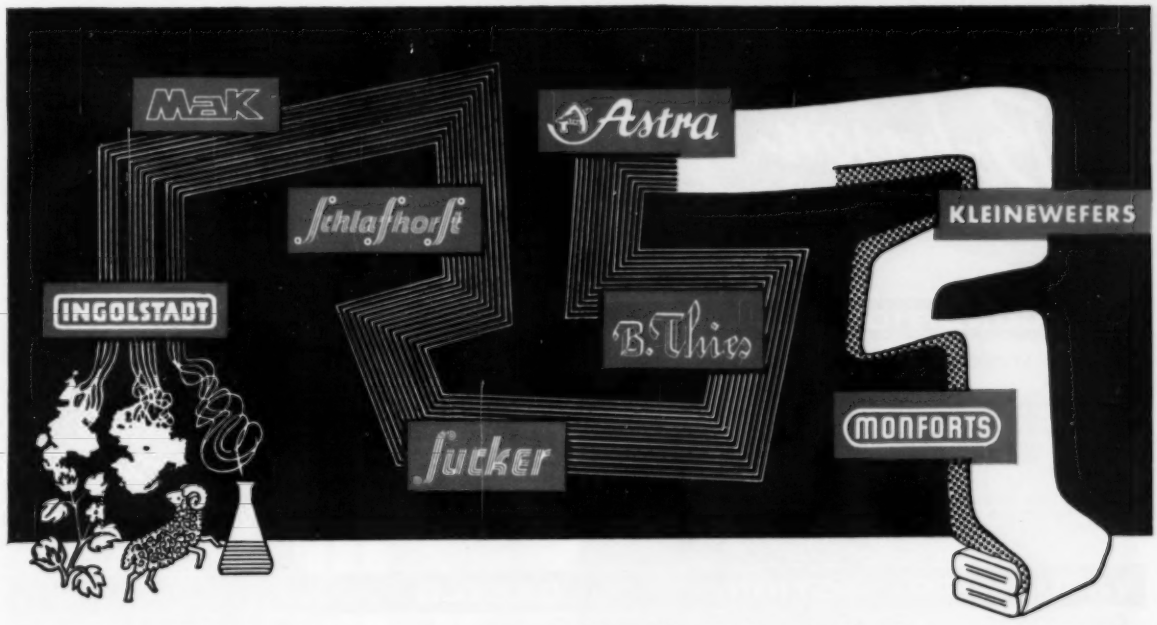
HOWARD BROS.

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C., Greenville, S. C.

Direct Representation in Canada

894



From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
MAK Card Sets · Self-acting Mules · Ring spinning Frames
SCHLAFHORST Machines for winding-warping and sectional warping
SUCKER Sizing Machines · Size Mixing and Cooking Installations
THIES Dyeing and Bleaching Plants for yarns and card-slivers of all kind
ASTRA Weaving Machines for cotton-, wool- and special fabrics e. g. feltcloths · Jacquard-weaving Machines
KLEINEWEFERS Calenders · Mangles · Printing-, Mercerizing machines · Continuous Bleaching and Dyeing Plants
MONFORTS Finishing Machinery · Measuring, Inspecting, Plaiting, Rolling and Doubling Machines for all kinds of cloth

NET

UNIONMATEX TEXTILMASCHINEN-UNION GMBH, FRANKFURT/MAIN, NEUE MAINZER STR. 22
CABLE: UNIONMATEX · TELEX: 0412487 · TELEPHONE: 95168/92522

For more data, circle A-15 on Reader Service Card

Bahnson AIR-O-MATION FOR 1959

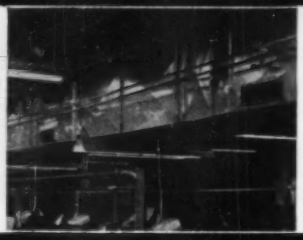
AIR AT WORK FOR INCREASED PROFITS

CONDITIONS • CLEANS • COLLECTS • CONVEYS

AIR CONDITIONING

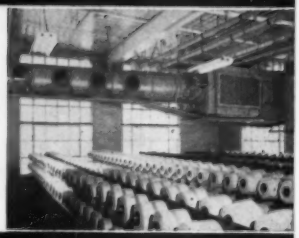
CENTRAL STATION SYSTEMS

Custom designed and built to your individual plant requirements with cooling by evaporation or refrigeration and complete with Bahnson engineered and manufactured components such as Type Y Air Washer, controls, grilles, dampers, automatic suction strainers and lint filters. Bulletin 22A has full information.



HUMIDUCT UNIT SYSTEMS

Flexible unit system of Bahnson design. Provides all or any combination of textile air conditioning functions including cooling by evaporation or with refrigeration. Humiducts are self-contained and light enough in weight to be ceiling suspended, eliminating costly apparatus rooms and structural changes. Bulletin 4A contains complete details.



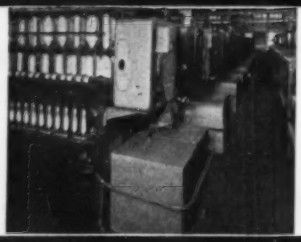
VACUUM COLLECTION

COLLECTO-VAC

Automatically collects broken ends, lint, fly on spinning frames. More uniform suction pressure the length of frame at lower horsepower. Anodized aluminum flutes do not warp or crack. Scroll type fan discharge disperses motor alley heat. Bulletin 30A has details.

Central Heat Removal System

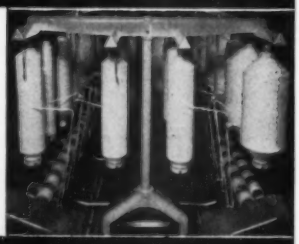
Takes out heat from collection units, motor alley, lowers room heat load. Can be added to existing collection systems.



CREELS

OPEN AIRE CREEL

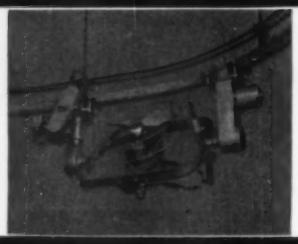
Open creel design, enamel finished with specially constructed, factory assembled steel supports and crossarms. Crossarms are notched for greater lateral strength. Bahnson-designed weight wire positioners keep weights in correct operating position at all times. Open Aire Creel furnished also with new spinning machinery purchases upon request.



CLEANING

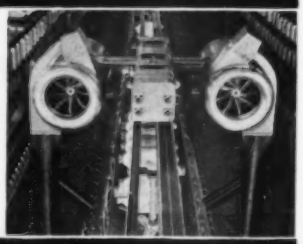
AERO-SWEEP CLEANER

Automatic oscillating traveling cleaner self-propelled along single ceiling suspended track. Cleaner blows perpendicular to track delivering head-on air blasts for more effective overhead cleaning of ceiling, beams, lights and piping. Has patented index feature for cleaning predetermined pattern. Write for Bulletin 21A.



CROSS JET CLEANER

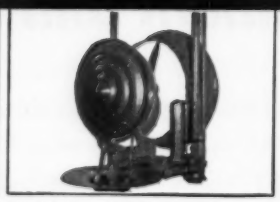
New cleaning principle with fixed and oscillating air discharge nozzles. The Cross Jet is self-propelled and operates on single rail creel-mounted track. Cleans entire frame, as well as walls, ceilings, beams, lights, etc.



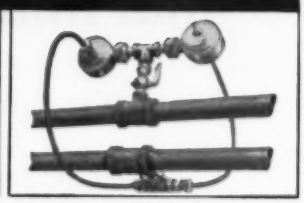
HUMIDIFICATION

Bahnson makes the world's most complete line of industrial humidification equipment. A type for every need is available of which only three models are shown. Whether for small rooms, large areas, or for supplementary evaporation, Bahnson designs and manufactures the best and most economical system to solve your humidification problem. Catalog Section 104 details complete line.

TYPE E



TYPE H



TYPE ESC ATOMIZERS

FOR DYERS AND FINISHERS

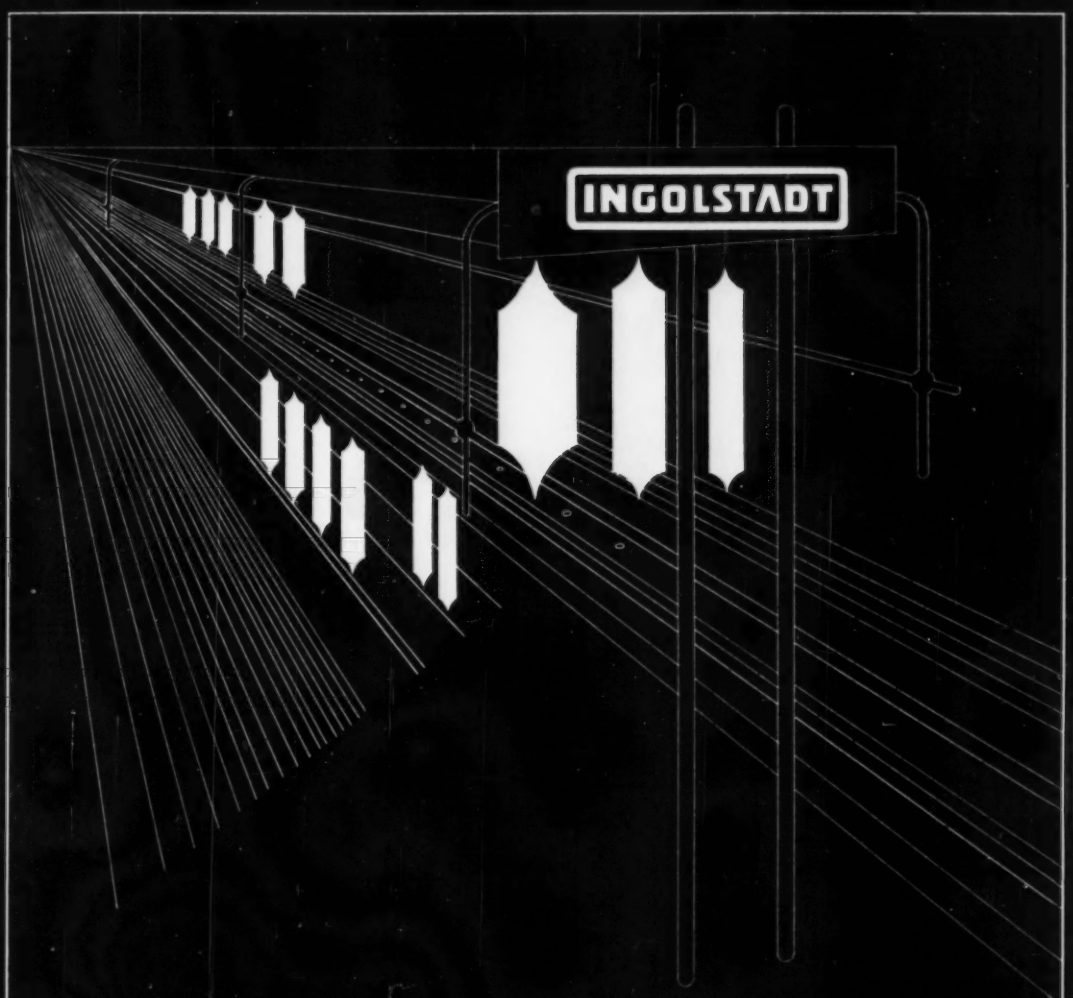
Bahnson can supply complete ventilation, exhaust and vapor absorption systems designed to fit specific requirements for Dyeing and Finishing operations.

91 of the top 100

textile manufacturing firms in the nation are users of Bahnson equipment!

Bahnson COMPANY
WINSTON-SALEM, N. C., U. S. A.

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY



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on latest experience in spinning technology and mechanical engineering

Spares for spinning machinery · Conversions of draft systems

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For more data, circle A-17 on Reader Service Card

KEK-PN

SCHWE

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N - KEK-PN
EK-PN
EK-PN
K-PN - KEK-PN
PN - KEK-PN
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PN - KEK-PN
N - KEK-PN
KEK-PN
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PRECISION CROSS-WINDER

Whether you are making (1) pineapple bobbins, (2) cylindrical cross-wound bobbins with tapered ends for 100% synthetic yarns, or (3) winding dyed textured yarns from skeins onto cross-wound packages through a yarn delivery device, the Schweiter **MONOFIL CONER** type **KEK-PN** is just the machine for you.

A product of one of Switzerland's best known machinery builders this Precision Cross Winding Machine is a superb example of modern manufacturing. Investigate now to see the advantages it has for you-

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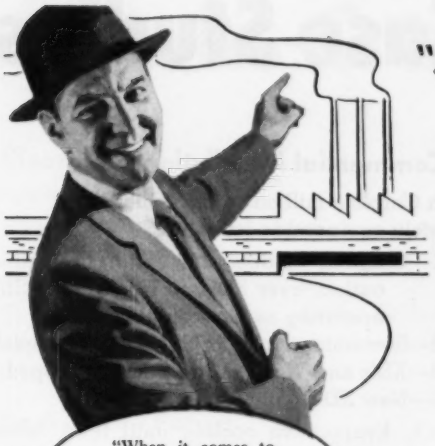
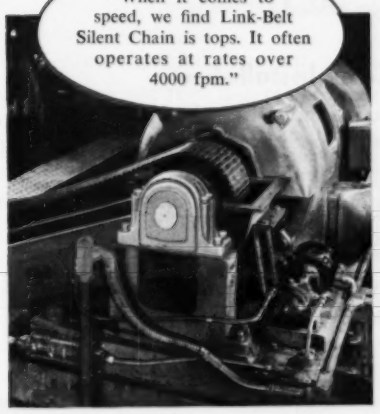
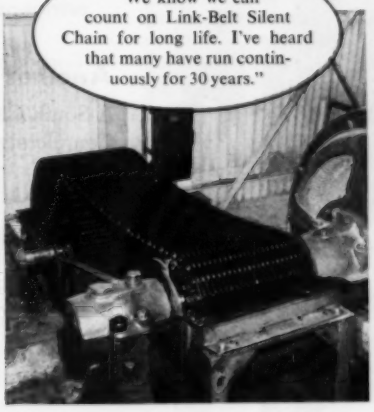
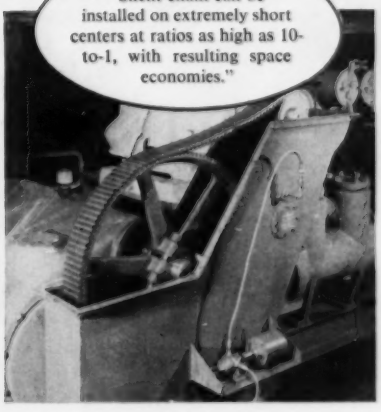


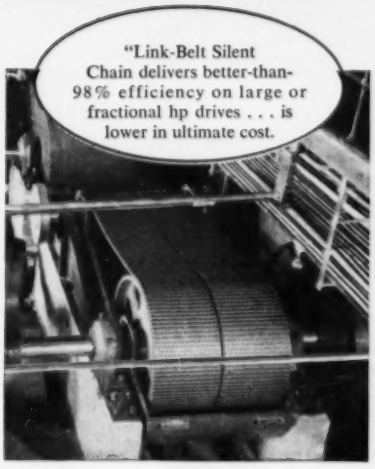
"Join me on a plant tour . . . see why

we're modernizing our drives with Link-Belt Silent Chain"









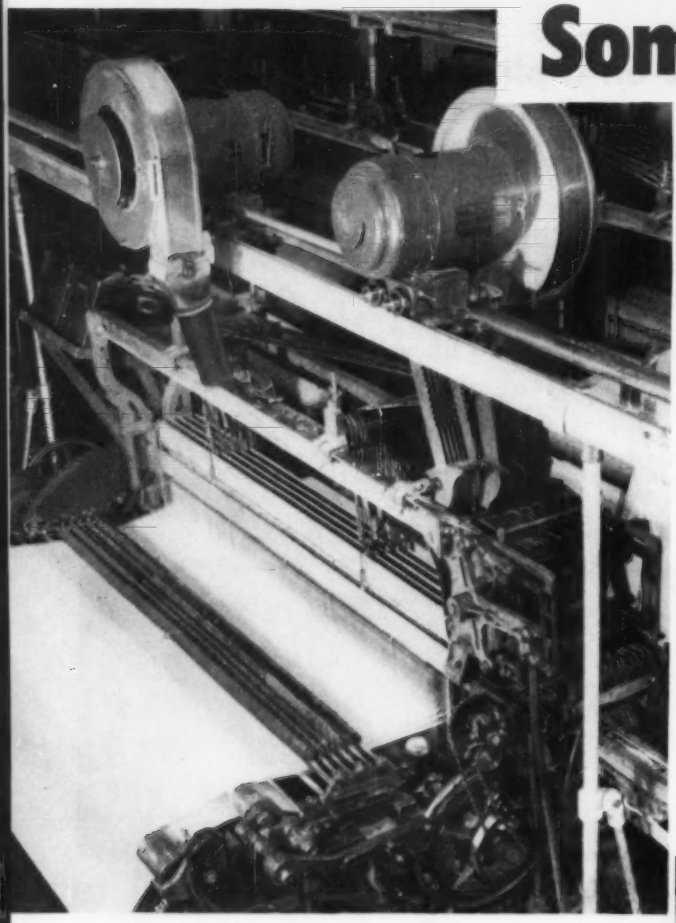
LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

FULL DETAILS on Link-Belt Silent Chain are offered in 88-page Book 2425. Get your copy from your Link-Belt office or authorized stock-carrying distributor. Look under CHAINS in the yellow pages of your phone book.

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs. Representatives Throughout the World. 15,042

Some Case Studies



First Commercial Installation

A North Carolina mill on spun synthetics.
Completely equipped in four steps:

1951—Original tandem unit, with oscillating outlets, over XD's, in No. 1 Mill. Still operating as illustrated.
1952—Remaining looms in this room equipped.
1953—XD's and W-3's in No. 2 Mill equipped.
1955—New XD's equipped.

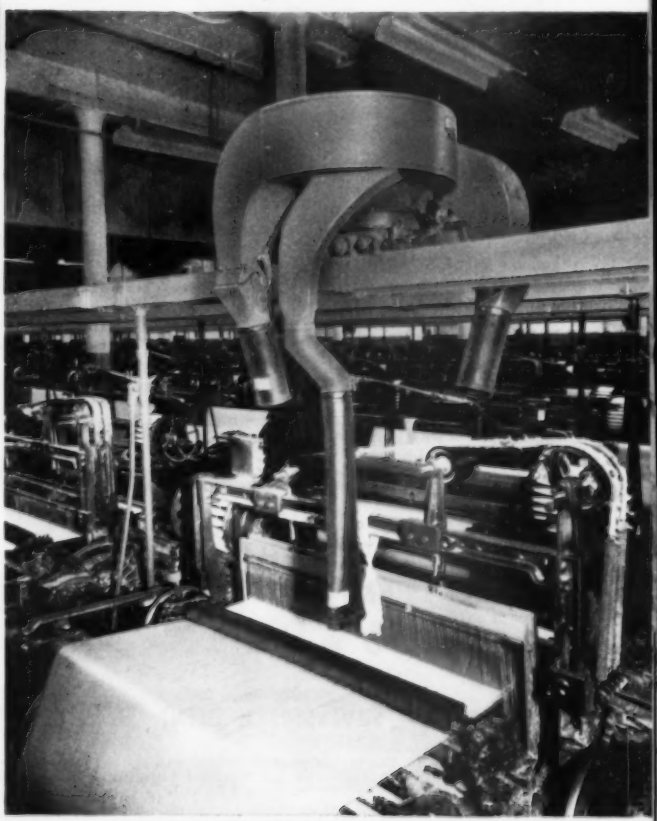
(70% r.h. Evaporative cooling until 1954, when refrigeration added.)

Another Early Installation

A South Carolina mill on combed broadcloth.
Completely equipped:

1953—Tandem unit over X-2's.
1956—System extended to remaining looms in room.
1958—Oscillaires over X-2's in another room.

(80% r.h. Central air washer humidification with booster atomizers.)



Equipment Design

Track:
Sturdy two rail—no swaying of unit.
Floor supported, for clear ceiling areas and ready accessibility. Supports easily removable for major loom maintenance.
Shock-absorbing mounting where needed.

Electric Conductors:
Solid brass. Safely shielded. Non-spark.

Oscillaire Blowing Unit:
Single-carriage, -motor, -fan. Low maintenance.
Oscillating and fixed air currents.
Air automatically deflected from certain areas.
High and low velocities separately adjustable.
Controlled air prevents lint boil-ups, loom troubles, seconds.
Travel is continuous-direction, or reversing.
Unit cleans itself and track.

Materials and Finishes:
Suited to dampness, stickiness and vibration.
Cleaner and track special-painted. Pastel and contrasting colors available.

# of Parks-Cramer Loom Cleaning

A Georgia Mill (below)

Completely equipped.

1956—Portion of X-2's in annex.
1957—Remaining X-2's in annex.
1958—X-2's in main weave room.

(82% r.h. Wet duct system. Drills, twills, and heavy cotton. Good cleaning under conditions that are not easy.)

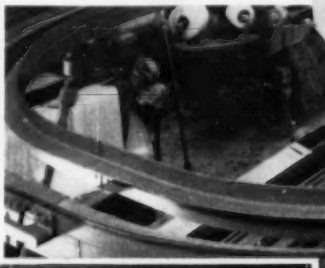
A Look at the Future

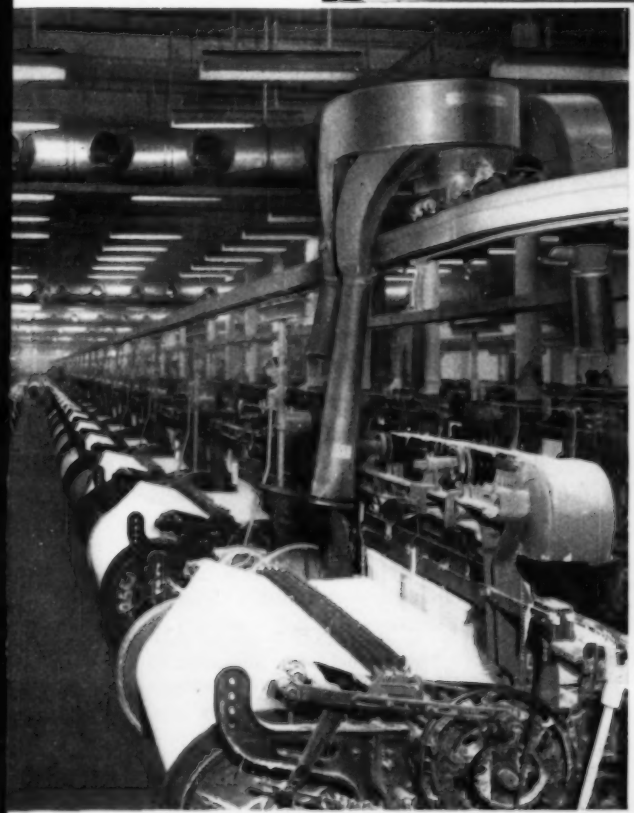
First commercial installation of shuttleless looms. Mill located in Georgia.

1958—Entire installation of DSL looms equipped.

Note traveling vacuum lint pickup and disposal unit in tandem with Oscillaire blowing unit.

(75% r.h. Dry duct air conditioning system with refrigeration and booster atomizers.)





Applications and Benefits

Oscillaire Loom Cleaning is applicable to a wide variety of looms, products and mill conditions, cotton or synthetics, fine or coarse fabrics.

Delivers air currents onto arch, harnesses, harness motions, drop wires, stop motions, transfer motions, lay, shuttle boxes, beam, yarns and fabric.

Prevents objectionable lint accumulations between warp-outs. Eliminates most hand cleaning by compressed air. Lessens loom stops. Increases production.

Greatly reduces woven-in lint, oil spots, set and start-up marks, skips, floats and pick-outs.

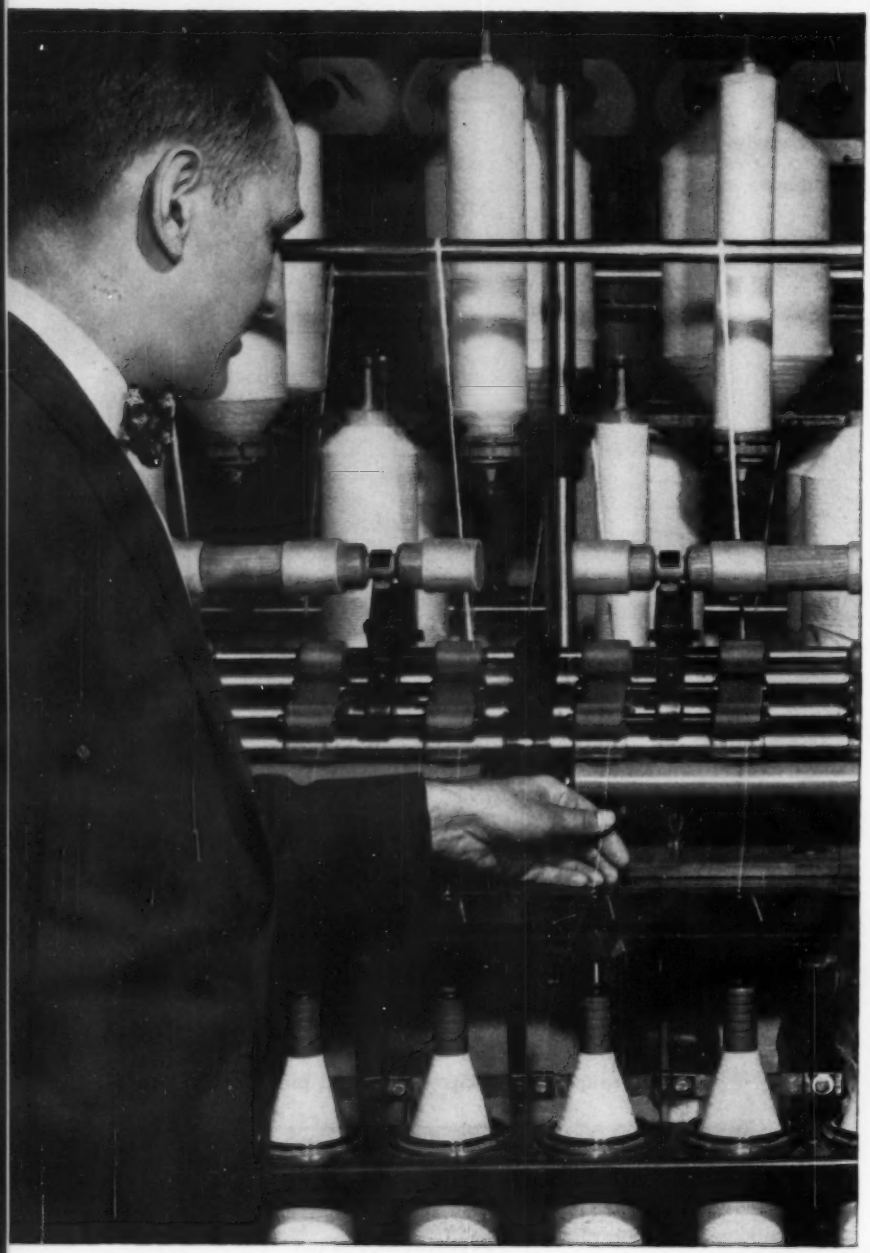
Parks-Cramer Company

FITCHBURG, MASS.

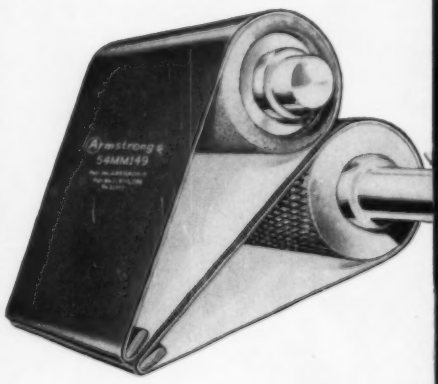
CHARLOTTE, N. C. ATLANTA, GA.

Traveling Cleaners since 1926

414

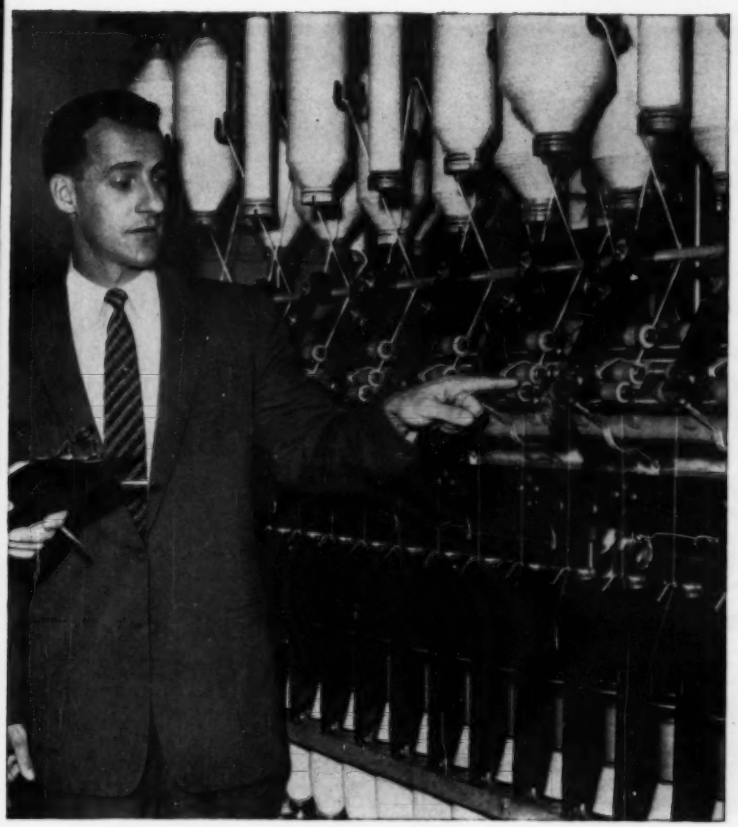


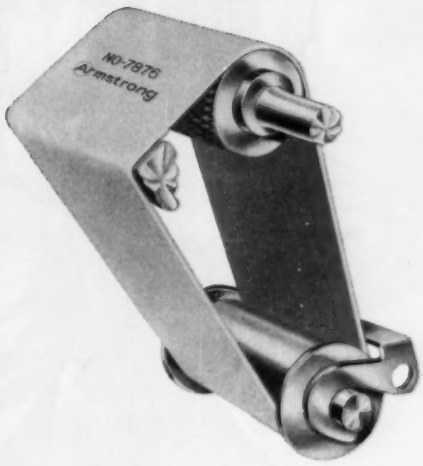
Produce



Accotex NO-7075 aprons give you long, trouble-free operation on all types of double-apron frames.

For more data, circle A-21 on Reader Service Card





Super-flexible NO-7876 Accotex aprons insure smooth drafting action and good yarn control on systems using long bottom aprons.

quality yarn on any high-draft frame with long-life Armstrong Accotex aprons

You can rest assured you're getting outstanding fiber control—the kind that produces top-quality yarns—with Armstrong Accotex aprons on your frames. Whatever spinning system you use, there's an Accotex apron that's engineered for it.

For long apron systems, a brand-new Armstrong apron—Accotex NO-7876—is recommended. Two new synthetic rubber compounds are used in this apron to give it superiority in yarn control.

The compound used in the outer surface gives excellent fiber control. In addition, its high resistance to flex cracking and ozone assures a longer service life. The apron's inner surface is specially compounded to conform to the drive roll for accurate tracking and full power transmission. The result of this two-compound construction is better fiber control and trouble-free performance.

The superior performance—and long service life—of the Accotex NO-7876 apron has been proved in actual use. In mill tests, the NO-7876 has given excellent performance for more than two years.

On close-pin double-apron systems, Accotex NO-7075 gives top-notch performance. This black and white apron was the first to use the two-compound principle. Each apron surface has exactly the right friction characteristics to insure smooth drafting action.

A strong interliner of cotton cord is built into every Armstrong Accotex apron. This assures dimensional stability—no stretching or curling—without reducing flexibility.

For proof of the superior yarn control and longer service life Armstrong Accotex aprons can give you, ask your Armstrong representative to arrange a test installation in your mill. Armstrong Cork Co., Industrial Division, 6406 Dauphin St., Lancaster, Pa. All Armstrong Accotex textile supplies are available for export.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

An Expensive, Unscheduled Coffee Break

CAUSED BY MOTOR BURNOUTS

Could have been prevented with

KLIXON

3-PHASE MOTOR PROTECTORS

KLIXON-Protected Motors are a sure, inexpensive way to insure steady production. By preventing motor failures, KLIXON Motor Protectors decrease costly delays and expensive motor replacements.

Built in by the motor manufacturer, they safeguard your motors and prevent overheating and burnouts caused by the following conditions —

Prolonged overloads, unbalanced voltage, stalling, failure to start, increased ambient temperatures, lack of ventilation, plugging or reversing duty, and single phasing.

The advantages to you are . . . safe maximum motor output under normal and adverse operating conditions . . . simplified motor controls . . . reduced motor repairs and replacement . . . reduced costly production down time due to motor burnouts.

KLIXON-Protected Motors are now available from your motor supplier. Specify and use motors with KLIXON Inherent Overheat Protectors. The savings offered more than offset the slight additional cost.

Write for your copy of Bulletin PR-1243. It explains the advantages of 3-phase motor protection.

METALS & CONTROLS

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A DIVISION OF TEXAS INSTRUMENTS INCORPORATED

SPENCER PRODUCTS: Klixon® Inherent Overheat Motor Protectors • Motor Starting Relays • Thermostats • Precision Switches • Circuit Breakers

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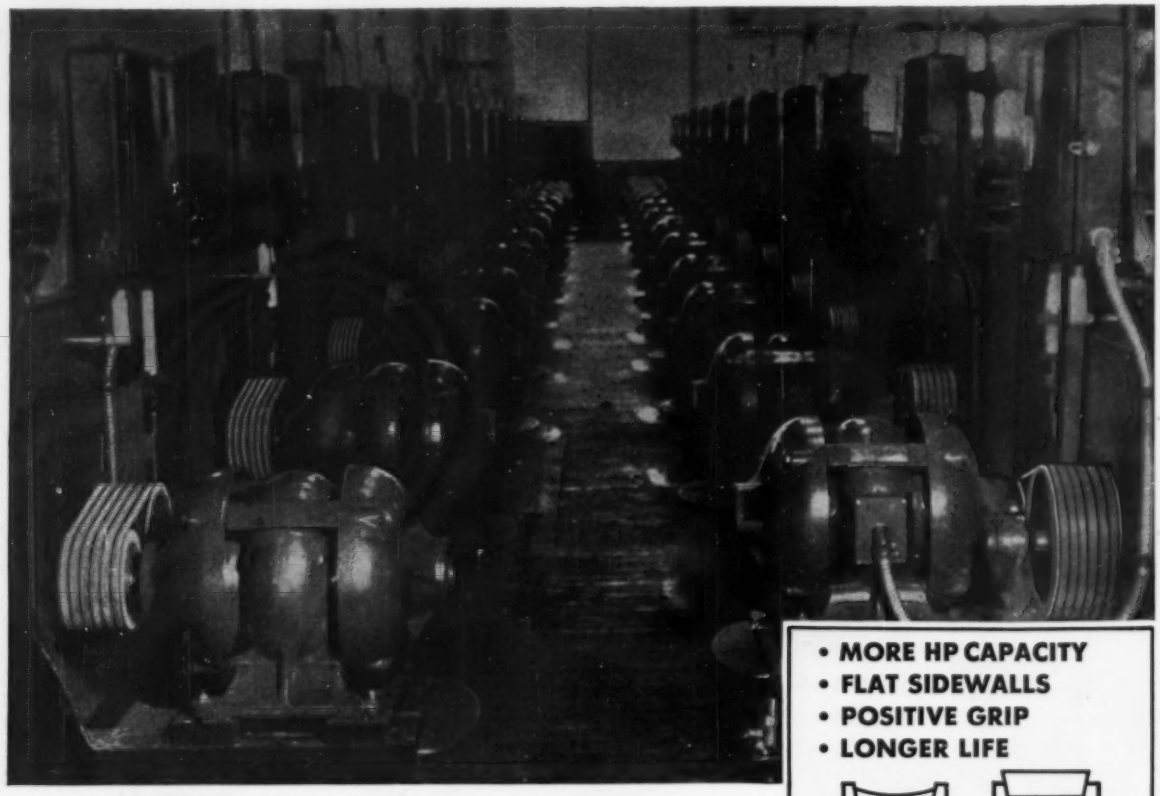

MORE GRIP...LESS SLIP

CONDOR V-BELTS NOW 40% STRONGER

Deliver More Horsepower at Standard V-Belt Prices

Condor V-Belt engineering makes the difference. R/M micro-positions belt strength members in special heat-dissipating rubber for a smoother, cooler running drive . . . and longer belt life under the heaviest drive loads. Condor V-Belt sidewalls are made *flat* to put positive pressure on sheave grooves for *more* grip, *less* slip . . . to assure maximum power delivery *without* costly power waste. Pre-stretching during manufacture removes any inelastic stretch that might otherwise occur. For users of longer length belts, C, D, & E cross sections are also vacuum-sealed in moisture-proof aluminum bags—*length certified* and fresh from factory to field! Specify Condor V-Belts . . . the smoothest running V-belts made for longer, trouble-free service and lower V-belt drive costs.

CONDOR ENDLESS BELTS—*On serpentine drives with short centers, small pulleys and reverse bends, Condor Whipcord Belts outlast as many as 10 ordinary flat belts. Exclusive Extensible-Tip cover splice and rubber rivets dissipate stress rounding pulleys . . . eliminate cover separation. Write for Bulletin 6869.*

- **MORE HP CAPACITY**
- **FLAT SIDEWALLS**
- **POSITIVE GRIP**
- **LONGER LIFE**

ORDINARY BELT CONDOR V-BELT

Note how Condor V-Belt at right prevents sag in the "power line".

1. ***All* cords of the strength member pull *equally* . . . deliver maximum, uniform share of power!**
2. **Firm sidewall pressure avoids power waste . . . MORE GRIP, LESS SLIP.**

THE SMOOTHEST RUNNING V-BELTS MADE!

Because Condor V-Belts ride properly in the groove, they run smoother, cooler . . . even on the toughest drives.

The flat sidewalls of Condor V-Belts insure that the lower, compression area of the belt properly supports the load-carrying strength members on a straight line, to permit all the cords to contribute their full share of the pulling power. This prevents premature failure caused by tighter cords being overworked. It also exerts a firm side-grip on the groove to avoid belt slip and power waste.

"More Use per Dollar"

Write for Bulletin 6868

RM-937

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For mills with a future!..the frame of the future

the New WHITIN

PIEDMONT

SPINNING FRAME

IN the new PIEDMONT, Whitin offers you a Spinning Frame which is not only smart in appearance, not only advanced in design — but which is also foremost in economy of operation. There are PIEDMONT benefits in every phase of your spinning operation.

PRODUCTION: Increases in front roll speed of 25 to 30% more than *average* production — and up to 15% more than *top current* levels.

PERFORMANCE: Simple construction with "built-in" efficiencies — straight line spinning plus SUPER-DRAFT for quality yarn — large "control-wound" packages for reduced spooling costs.

MAINTENANCE: Lowest cleaning costs possible thru streamlining — open construction — ball bearing assemblies — unique single-spindle drive — elimination of cylinders and tapes.

In every respect, the Frame of the future
for mills with a future!

Features 27" width, traverses up to 12", enclosed single spindle drive, simplified head end and gearing, new builder, integral waste removal and motor cooling unit.

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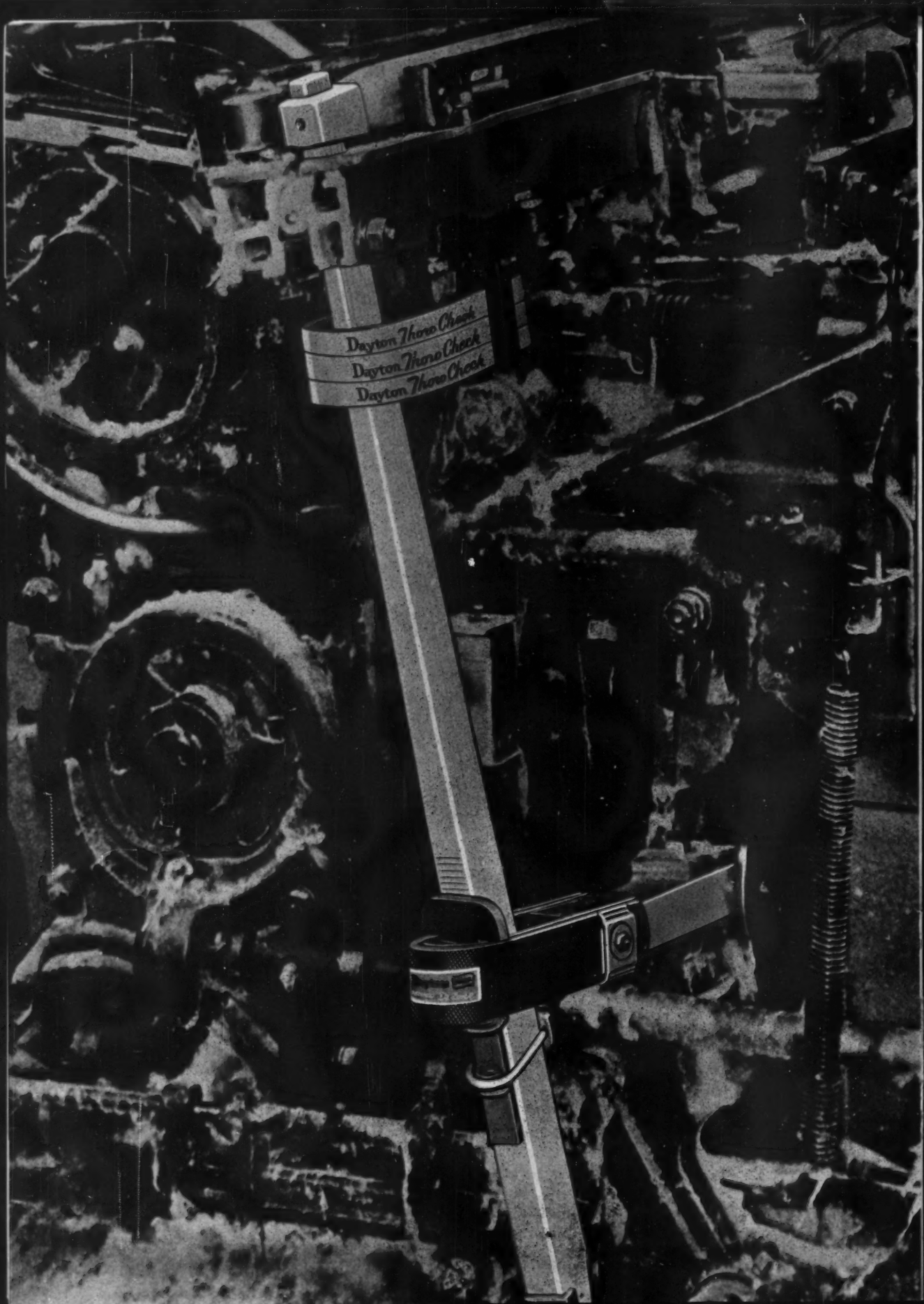
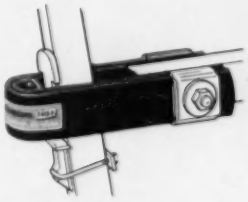

Dayton Thaw Check
Dayton Thaw Check
Dayton Thaw Check

To Eliminate Downtime

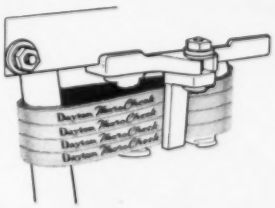
Guard These Three Points with the Shock and Wear Resisting Dayton Combination

GET RIGHT TO THE SOURCE and you'll eliminate unnecessary downtime that runs up expense and hampers your production. There are three points to watch . . . because they take most of the punishing wear and shock . . . the loop picker, the check straps and the lug strap.

That's why Dayton has concentrated on perfecting a balanced combination to protect all three points of shock and wear. And, it takes all three to absorb the shock of high speed shuttles, smoothly check the picker stick, and accurately deliver the shuttle return. Try the Dayton combination.

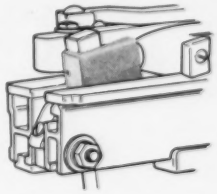


SHOCK ABSORBING Dayton Thorobred Deluxe-Lug Straps are molded together around a built-in plug that soaks up the hammering blows generated in the first instant of picker stick thrust. One-piece, link-free construction is the secret of longer service with greater protection for both the stick and loom.



GRADUATED CHECKING ACTION of Dayton Endless ThoroCheck Straps . . . plus a stronger multi-ply construction . . . adds 6 to 8 months more of trouble-free service. With multi-straps to do the checking, there's never any drag over the face of the stick and no interference with the shuttle throw.

WEAR RESISTANT Dayton Thorobred Loop Pickers last for millions of contacts. Here are the three reasons why! The tilt of the picker face is perfect for strainfree shuttle contact . . . tapered picker stick hole and tapered bottom insure accurate seating and protect against tearing the loop ply . . . corners are round and smooth to prevent jerked-in fillings.



Start saving today by refitting your looms with the Dayton combination. Then compare the long life, freedom from downtime and, above all, the smoother picking action that only Dayco products can give you. Order through your mill supply jobber or write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Building, Greenville, S. C.

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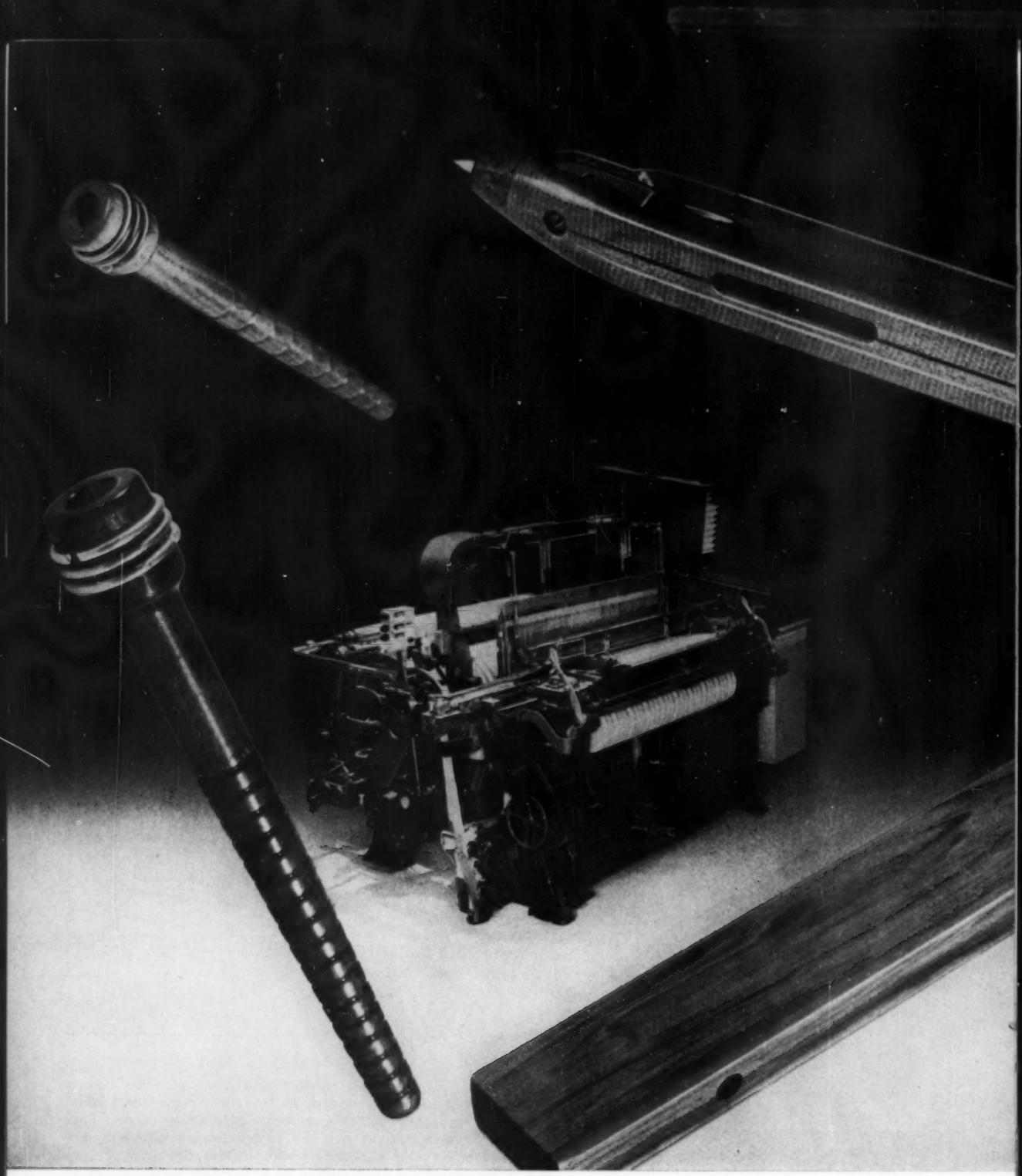
Dayton Rubber

Dayco and Thorobred Textile Products For Better Spinning and Weaving

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND

For more data, circle A-24 on Reader Service Card



Planned for profit . . . Greater weave room efficiency and profit is more easily accomplished when Draper looms are backed by Draper accessories and **original** Draper repair parts. It's just good business sense to look to the **original** loom builder for quality in essential accessories and repairs. Every part bearing the Draper trademark reflects careful

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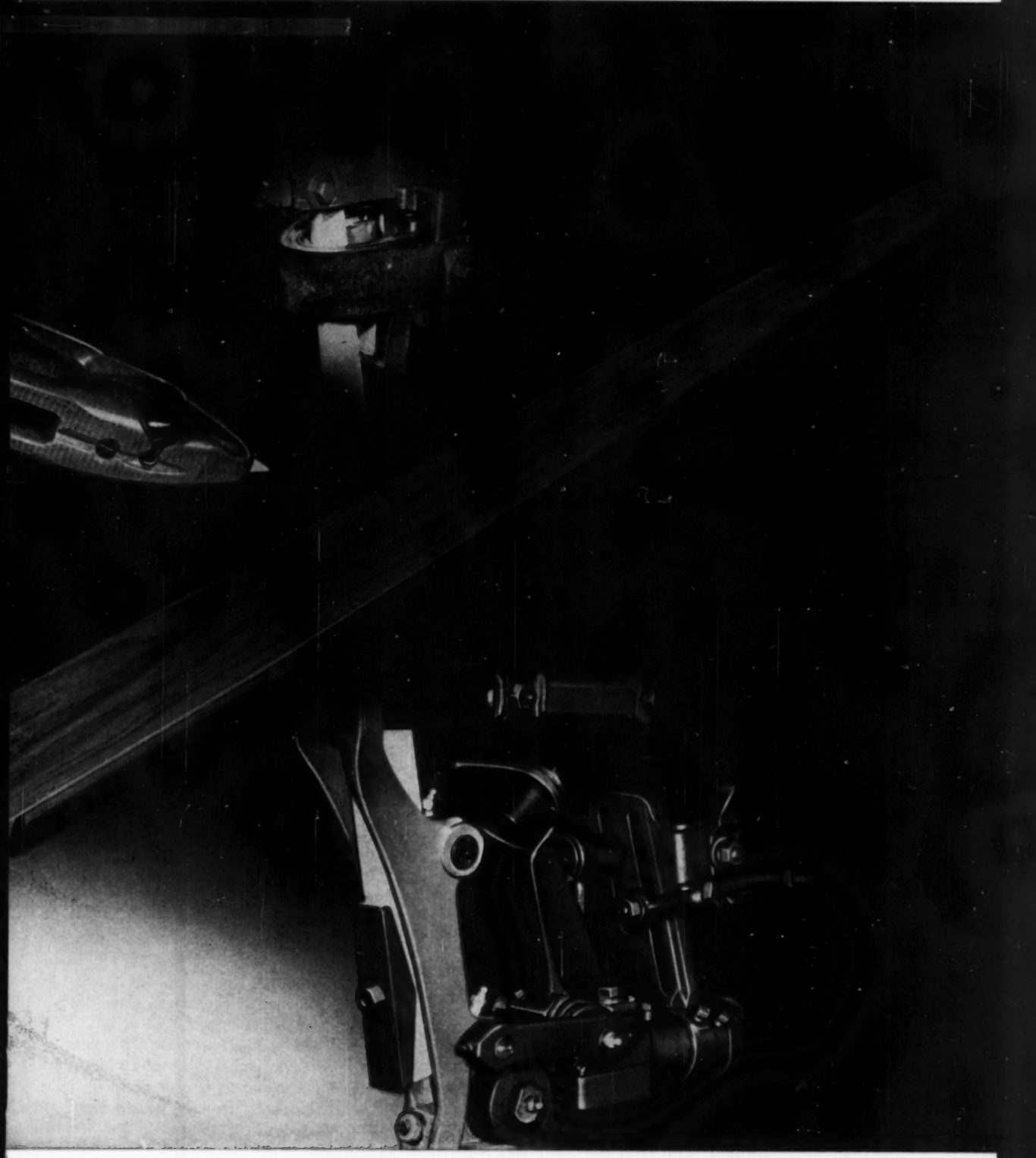
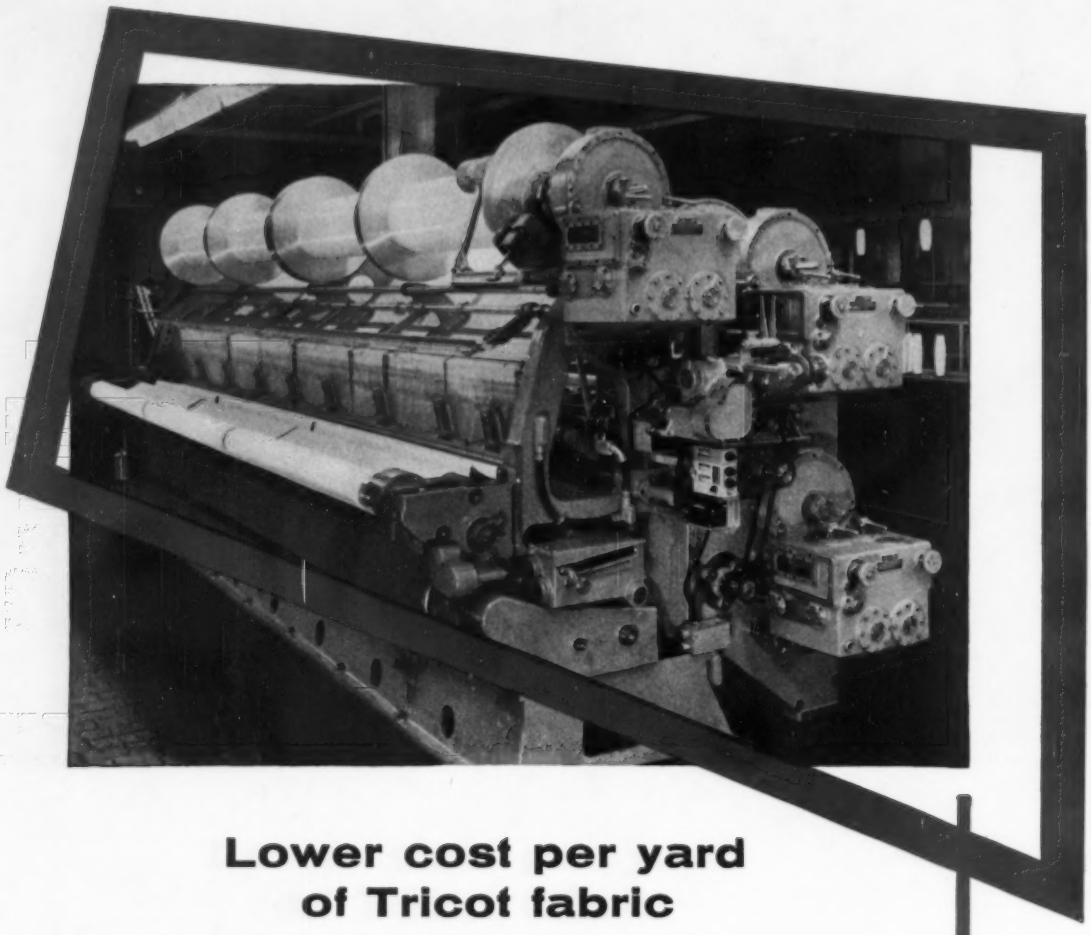


development and extensive mill trial. For these reasons, Draper parts and accessories give the maximum in service and performance. Why take chances on misfits or mongrel designs? When you specify **original** Draper products you are protecting your profit picture.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.



Lower cost per yard of Tricot fabric

Here is the new 3-bar high-speed "READING" Tricot Machine, combining all the mill-proved features of the 2-bar machine, plus new and exclusive advantages:

Interrupted let-off control for front and middle beams

Accommodates warps up to 32″ dia. for bottom and middle beams, 21″ dia. for third beam

48-course pattern drums independently mounted and designed for use with varied length pattern chains

Continuous production at high speed, amazing uniformity in fabric yield, and low cost per yard of fabric are assured, with both the 2-bar and 3-bar machines. Knitting width, 168″. Let us give you full details.

Wire Products Division
TEXTILE MACHINE WORKS • READING • PENNA.
Builders of Textile Machinery Since 1900

The "READING" *Tricot Machine*

For more data, circle A-26 on Reader Service Card

A New Migration

A new day in the textile industry was vividly illustrated early last month at the Knitting Arts Exhibition in Atlantic City.

Whatever else they do, exhibitions serve one extremely useful purpose: they point the way of future technological directions of the industry. As always, a knitting show is concerned primarily with yarns and machines; and the show last month stuck to the pattern. But the directions for the future indicated by late developments bode major changes in the industry.

U. S. or Foreign Machines?

Perhaps the most disturbing factor was the presence, if not the domination, of foreign-made machines, particularly throwing and knitting machines. Most of them were exhibited by well-known U.S. machinery manufacturers—but that is the disturbance.

For several years now, U.S. manufacturers have sold foreign-made machines in the U.S. market. A number of these machines have served mills well and won enviable reputations.

But it is becoming evident that it is getting more profitable for machines to be developed and built in Europe and sold in the U.S. than to do the whole job in the U.S. The harsh fact seems to be that the costs of steel, labor, and machine tools have priced many U.S. textile machines out of the market.

So far, the most common pattern is for a U.S. manufacturer to help adapt a machine for U.S. mills and serve as sales and service agents. But two other patterns are also emerging:

1. The U.S. and European manufacturers form a joint corporation and build machinery in Europe for the world market, including the U.S.

2. The U.S. manufacturer sets up its own corporation and plant in Europe and builds "American" machines for sale in the U.S.

In all of these arrangements, the sole purpose is to build textile machines at a price that mills can and will pay in competition with other similar machines. In short, the manufacturer is only trying to stay in business and make a profit.

What It Means

There is nothing wrong about any of these arrangements. One thing that always caused mills to go slow on equipping with foreign basic machinery was the threat of war cutting off supplies and replacement parts. Most people discount that threat now, convinced that there will be no more long wars such as the two world wars. So it now matters little to a mill whether it has U.S. or European machinery.

But it is a serious matter that textile-machine manufacturing may be forced to leave the U.S. It may please the "one-worlders" to see a U.S. industry move out of the country, out of the hemisphere altogether. It may even be a step toward the millennium the "one-worlders" visualize in which every area and people of the world will be specialists and do what they can do better and more economically than others can do it.

But it also is a step down the primrose path trod by the Roman Empire, the British Empire, New England mills, and Patterson-area finishers. Greatness, vigor, and wealth are based on producing and selling. When the costs of production are fictitiously forced beyond competitive success, there's no choice but to go out of business.

A Lesson for Mills

Mills face the same long-term threat as machine manufacturers. The round of wage increases early this year added many millions of dollars to the yearly cost of textile products. A few weeks ago, Courtaulds in England cut the price of rayon 2¢ a lb. at about the same time that its U.S. company, Courtaulds (Alabama), raised its price 3¢ a lb. In England, hosiery knitters took a pay cut ranging up to four pounds ($11.20) a week in April.

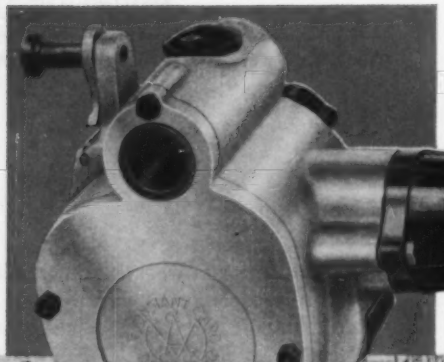
These things widen tremendously the competitive gap between U.S. and British production costs. Even wider gaps exist between U.S. costs and costs in other foreign countries.

At the moment, U.S. mills have at least token protection against imports. But it is not real protection. It will not save markets, any more than the token protection U.S. textile machinery has can save that market.

The only real hope for mills is to reduce the total cost of mill products. Labor rates cannot be reduced; they will continue to rise. Not much can be done about reducing fiber price, although cotton will come cheaper late this year. So worth-while reduction can come only in manufacturing and sales costs.

It is not a question of whether these costs can be reduced. It is only a question of reducing them or going out of business—not only for an individual mill but for the U.S. industry itself.

D. N. Thomas



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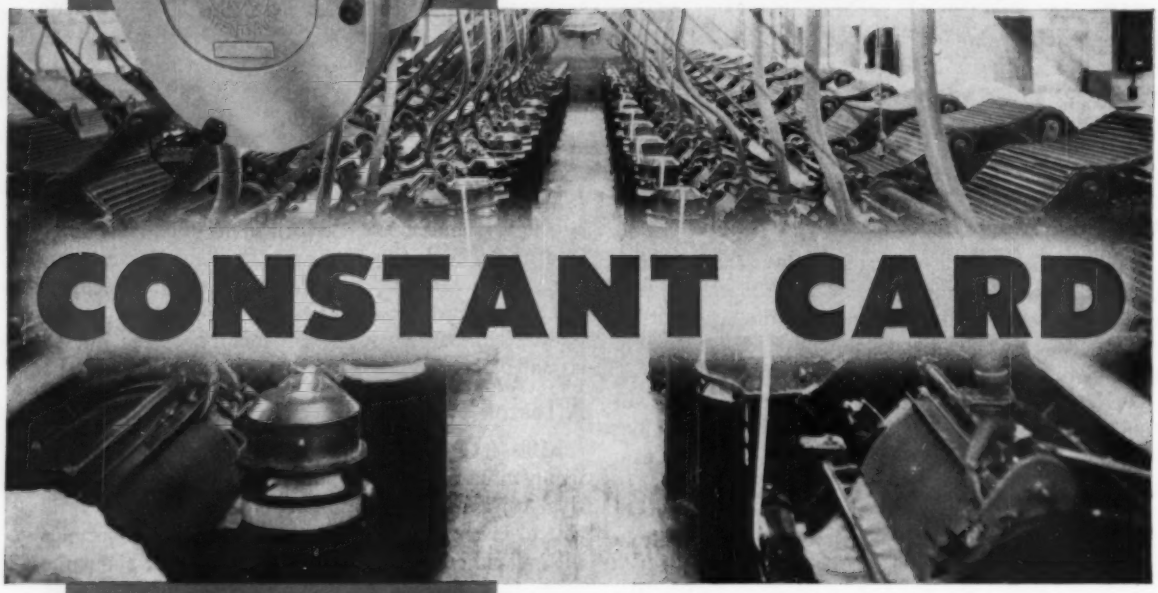

CONSTANT CARD

The successful use of CONSTANT CARD by mills throughout Europe and Asia indicate its destiny to become standard and essential equipment with the American textile industry. There is a 170 card installation in the United States, and many more leading mills are starting to make installations. Equipment is available for immediate delivery.

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Pneumafil Corporation announces its appointment under exclusive license to manufacture and supply to the United States and other North American mills, the famous CONSTANT CARD which was developed and perfected by C. A. Constant Card, Barcelona, Spain.

CONSTANT CARD is a self-contained, vacuum suction system which greatly improves the carding action of the cotton-type card by maintaining a constant fiber load on the cylinder, thereby giving a superior and constant carding action between flats and cylinder.

Stripping cycles are increased up to 120 hours, resulting in phenomenal fiber savings, labor savings, and quality improvements. The equipment pays for itself in a very short time.

A Pneumafil representative will be pleased to call, at your convenience, to discuss all aspects of CONSTANT CARD.

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Other Products for Progress— **UNIT SYSTEM • LINT FREE CREELS**
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Textile World

Volume 109, No. 6, June, 1959

1959 Knitting Arts Exhibition—

1. Emphasizes faster, more-versatile machines
2. Points up importance of textured yarns

WELL OVER 10,000 VISITORS, most of them mill-production management men, looked closely at over 300 booths at the 44th Knitting Arts Exhibition in Atlantic City early last month. Many booths exhibited as many as six different new machines.

These prospective buyers saw the newest improvements in knitting machines, textile chemicals, general mill equipment, natural and man-made fibers and yarns, and packaging machines and supplies.

One of the outstanding impressions gained at KAE was that the competition by man-made fibers for their share of the knitted-fabric business is very keen and that textured yarns are the mainstay of outerwear production.

The competition is severe enough so that no one fiber or texturizing method is an actual standout; each method and fiber has a niche.

The newest ideas include texturized spun Orlon, 6- and 10-den. Orlon filament, and high-bulk Arnel. The Orlon filament, called Cantrece, used in samples shown by Du Pont makes a particularly clear stitch in a smooth, pill-free fabric of considerable elegance.

The texturizing of spun yarns may seem to gild the lily but does produce a new and interesting effect.

Machines, Yarns Share Interest

The show's features were pretty evenly divided between machine improvements and examples of what is being done with man-made fibers of different types and spun into different kinds of yarn.

Fashion trends were toward very bulky fabrics for sweaters, and a market for knitted goods in men's sportswear is increasing.

Suppliers, machine manufacturers, and processors all reflected the generally optimistic feeling now pervading U. S. business as a whole. One manufacturer of nylon 6 claims to be short of facilities to handle orders.

Machines shown this year stressed better control and higher productivity. Tricot machines that produce 950 to 1,000 courses per minute are examples of the advances made in this category.

Newer, faster, and more-automatic machines from throwing through fabric finishing were demonstrated. Mill men looked at these machines with genuine interest and with the idea of buying to increase profits; some machines will increase production 30%.

Foreign Machines Grow in Importance

Foreign-built knitting machines in practically every category were much in evidence at KAE.

Two raschel knitting machines, one with an overlace pattern attachment from Germany, were complemented by a stretch-yarn machine from France that operates at 73,000-rpm. spindle speed. Also featured were a number of circular-knitting machines from Italy and Germany. Flat-bed machines for tapes and body fabrics, originating in France, are being imported by American firms. The production potential of the machines is generally of high order. The construction of the machines and the finished appearance is excellent.

Yarn-Preparation Machinery

A new yarn-delivery device for Schweiter's Monofil-Coner and Vario-Coner lets the machines run high-bulk yarns from 12- and 14-oz. packages directly to pineapple cones. The yarn remains slack to insure against stretch.

Whitin Machine Works showed a stretch-yarn machine that it will build under license from a French manufacturer. The machine produces false twist of high uniformity on a 22-in. tube at a spindle speed of 73,000 rpm. Yarn is said to have good dyeability.

A long-fiber spinning frame was shown producing knitting yarns in the booth of Roberts Co. The frame spins fibers from 1½ to 8 ins. long. When the yarn number to be spun requires it, rails with different-size rings can be substituted.

A doubler-twister shown by Fletcher Works has bobbin capacity up to 4½ lbs. of filament yarn and 2½ lbs. of spun yarn. The high-speed machine can use three different types of bobbins.

A take-up for low-twist yarns on spools was demonstrated by Foster Machine Co. It provides close tension control.

For tricot warping, Cocker Machine & Foundry Co. showed its warper with a newly added Louis Allis Tach-Pak drive that gives speed-indicator accuracy within ±2%.

Yarn-Packaging Equipment

A tricot beam of 30-in. dia., said to be the largest tricot beam ever made for nylon yarn, was exhibited by Hayes Industries. The beam shown contained 91,000 yds. of 30-den. nylon and is estimated to reduce over-all machine downtime by one-half.

In yarn packaging, Sonoco showed three new products: (1) Dytex L bleached tubes; (2) bulk-yarn cones with a special Unitex surface and lacquer tip resistant to coning oils; and (3) yarn-conditioning cones that will not break down.

A jack spool for carded wool yarn that has a ½-in.-thick fibre insert inside the spool head was shown by National Vulcanized Fibre Co. This improvement serves as a shock absorber to resist bangs, bumps, and drops without loss of

spool concentricity.

A twister bobbin designed to withstand the crushing force of nylon yarn at high speed was shown by Allentown Bobbin Works. It is all-aluminum construction or all-aluminum with a Bakelite head. It's built 8 to 10 ins. long by customer specification.

Knitting Machines

Many new knitting machines were shown for every type of knitting.

In needle-bar machines, two German machines shown by Mayer Textile Corp., were viewed continuously by mill men:

1. A raschel knitter with 2 to 24 bars was making an overlace pattern from a nylon ground beam and an acetate-inlay beam. There's a 14-needle jump at one stroke, cams run in a bath of oil, and speed is 320 courses per minute.

2. The second machine shown by Mayer is a double-needle-bar raschel model of very solid framework that can be equipped with up to six guide bars if necessary. Speed is 440 to 450 courses per minute.

One of the attention-getting exhibits was the Liba Excentra tricot machine exhibited by Robert Reiner. Operating at 950 to 1,000 courses per minute, the 170-in. two-bar model features ring bearings and eccentrics to move the needle bars. It will handle 30-in. beams. Yarn let-off is positive and electrically controlled.

Hosiery Machines

Hosiery of all kinds will be made on the newer machines with greater output and flexibility. Machines for seamless hosiery predominated at the show to meet the present growing market for this type of hosiery.

Textile Machine Works, up to now stressing its full-fashioned machines, announced its entry into seamless-hosiery machines with a licensing agreement from an English manufacturer, W. E. Booton Ltd.

The Booton machine is built in gauges from 400 to 475 needles with 3¾-in.-dia. cylinders running at 185 rpm. Production is 5 doz. pairs of hosiery per 24-hr. day.

A feature of seamless-hosiery machines was Fidelity's dual-speed 400- and 474-needle electronically controlled machine. The company's automatic true-rib machine for children's anklets makes the GeTaZ toe.

Three seamless-hosiery machines were shown by Scott & Williams. All three are high-production multispeed machines with 400 to 475 needles.

Men's hosiery is being knitted on the new machines in greater pattern ranges than ever before with better attachments and controls.

Bell Machine Co. featured a 5-in., 84-needle, 10-gauge rib machine for combination patterns with a production capacity of 7 doz. pairs per 8-hr. shift.

High-Pile Knitting Machines

Two of the most outstanding machines at the show were high-pile-fabric machines.

The first, a latch-needle circular jersey machine shown by Wildman Jacquard, is equipped with miniature cards and produces fabrics 54 ins. wide. Natural and man-made fibers are knitted at 5 to 7½ yds. per hour.

The other machine is a Tompkins spring-needle machine with high-pile cards and speeds. It has a vacuum air-cleaning system, and it never has to be dismantled for cleaning.

In addition to the high-pile machine, Wildman Jacquard showed five other machines. Of these five, a circular knitting machine, LHB, created the most interest. It makes bulk-yarn outerwear in almost limitless patterns and stitches.

Two new machines were shown by Supreme. A 20-in. machine for jersey knitting has 28 needles per inch with 64 speeds. Production is up to 66 yds. per hr.

A flat-bed links-and-links jacquard machine built in Germany, Stall Model LIUM, was shown by Knitting Machine & Supply Co. This single-system-transfer machine has a 60- or 68-in. needle bed, and gauge is 6, 8, or 10.

Generally machines for circular knitting were designed for bulky outerwear. For this switch, machine gauge is changed to fewer and larger needles.

Pattern cylinders, too, are easily changed for fast style changes.

What's New in Auxiliaries

Improvements in sewing, marking, labeling, and button-attaching machinery were much in evidence. Practically all sewing machines now are available with needle-positioning attachments that eliminate the need for the operator to raise the needles to start a new run.

Shank buttons are fed and positioned automatically by means of a new Shankemat attachment available from Singer Sewing Machine Co. A similar device offered by Rochester Button Co. utilizes vibration to deliver and position shank buttons.

Packaging machines at the show included a unit featured by Hayssen, which forms a package from polyethylene strip, and from Amsco a baler that wraps and labels multi-unit packages of socks, underwear, or similar articles. The trend on packaging machines is toward wrapping and labeling in one operation.

A hole detector for knit goods was shown running on an 18-in. 22-cut circular machine knitting flat goods with selvages. The feeler fingers retract at the selvages and then return to the fabric to pick up damaged fabric all the way between selvages.

Finishing Equipment Is Improved

Automatic boarding, dyeing, and finishing in one operation is featured in Turbo Machine Co.'s newest model machinery at the Exhibition. The machine produces up to 140 doz. pairs of hose per 8-hr. shift with one operator. Hose are handled directly from gray-goods examination in one operation, and raw pirn yarns can be used throughout with excellent elasticity of the finished hose.

The scouring, dyeing, and finishing are done under pressure with metered amounts of processing solutions.

A knitted-fabric dryer, not shown but publicized by Proctor & Schwartz, features completely relaxed support for fabric as it is dried by hot air that impinges on both sides of the goods. Production is said to be 400 lbs. per hr.

CONTINUED ON PAGE 162

For more details of machines and equipment shown at KAE, see Equipment & Supply News in TEXTILE WORLD in March, April, May, June, and July, 1959.

Preventive Maintenance Cuts Cost at Spooler and Warper

• High-speed spoolers and warpers frequently break down or get out of adjustment if they are not carefully checked and repaired. Here's how one mill lowered operating cost 15% by setting up a systematic program of inspection and repair that reduced down-time and end breakage to a minimum.

THIS WELL-TESTED PREVENTIVE-MAINTENANCE PROGRAM for spoolers and warpers calls for machine parts and other items to be inspected daily, weekly, monthly, quarterly, and annually according to printed check-lists and for repairs or replacements to be made immediately. In some instances, the parts are referred to by catalog number to avoid misunderstandings.

After each inspection, written reports that indicate the action taken are made by the section man or fixer concerned and turned over to the second hand. The second hand makes random spot checks and gives the report to the overseer, who also makes spot checks.

If the operation is satisfactory, the report is filed in the overseer's office. Otherwise, immediate steps are taken toward corrective action.

Check Lists Are Thorough

Six different checklists are used in spooling and warping. Here they are:

Daily check

1. Drum-bearing laps
2. Oil level of blower
3. Waste-can bag
4. Blower vacuum
5. Suction-tube shears
6. Knotter shears and clamps
7. Warper report for sudden increase in stops
8. Skewer failures reported by the spooler girl

Weekly check

1. Oil level in conveyor and hooker-shaft gear cases
2. Setting and condition of snick plates
3. Detector mechanism
4. Belt tension, traveler, blower, conveyor, and elevator
5. Truck wheels
6. Spindle-arm shafts (greased)
7. Warper beam-guard contact
8. Warper stop mechanism
9. Drop wires

Pockets Are Overhauled Daily

In addition to the daily check, two spooler pockets per unit are overhauled each shift. The procedure is:

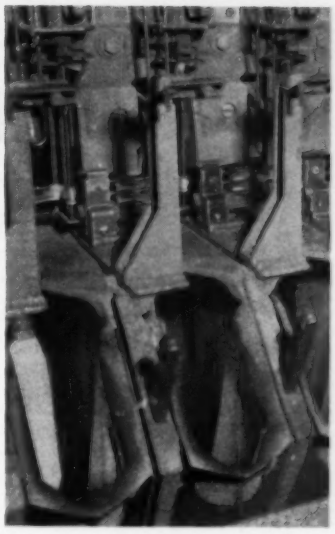
1. a. Remove pocket, place it on work bench, clean all parts, and replace worn parts.
   b. Check snick plate, turn grid bars, and replace worn parts.
   c. Replace pocket.
2. a. Inspect detector finger, spring, spindle, and bracket; replace worn parts.
   b. Check upper and lower pressure levers; replace levers and insert where needed.
   c. Check springs and pins, and replace where needed.
3. Check cheese-arm bushings, spindles, clamps, dogs, and arm for tightness on the spindle.
4. Check cheese alignment.

Other Parts Are Checked

Additional items checked or repaired by the first- and second-shift section men are:

Monthly

1. KKB 177-1 dog rolls
2. KKB 180-1 upper pressure-lever top insert
3. Elevator mechanisms, pulleys, and shifts for binding
4. Truck wheels on top casting for proper turning
5. KKG-91 main-shaft nut above knotter camshaft
6. Travelers for worn cams, plows, and rolls



TWO SPOOLER POCKETS are completely overhauled each shift. Snick plates and grid bars receive special attention.

7. VNB-37 let-off pinion nut on VW and VWR warpers

Quarterly

1. KKW-4301 drum bearings for tight supports
2. Elevator shafts and bearings for binding (take pulleys off)
3. Gear case and parts inside case
4. Blower (wash with cleaning solvent, and install new oil)
5. Blower pulley stand for wear
6. Muffler and oil separator (clean)
7. Dash pot or antibounder shaft for binding
8. Oil level in dash pot on warper
9. Warper clutch (take apart)
10. Warper brake (take out)
11. Drop wire for contact with drop light
12. Parts in timer (remove case cover)
13. Switch cams and contacts on VW and HW warpers

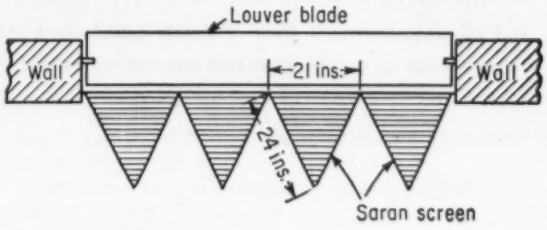
Yearly

1. Cheese cores (clean and grease)
2. Traveler back plate (remove and overhaul)
3. Conveyor and rocker-shaft gear cases (clean with cleaning fluid and inspect)
4. Let-off mechanism on warper for worn bushings
5. Planetary gear (remove case cover)

Chicopee Solves Lint Problem In Central-Station Air Washers

• Saran screening over six- and eight-section saw-toothed frames at five central-station air washers has eliminated the common lint problems at Chicopee Mills. The material is also being used successfully for a water-tank filter screen.

By HAL GILBERT,
Plant Manager, Chicopee Mfg. Corp., Athens, Ga., Div.



SARAN-COVERED FRAME of central-station screen is shown here in a cross-section plan view. The screened section is slightly more than twice the area of the wall opening.

THE NORMAL PROBLEM of keeping the screens of central-station air washers clean in our spinning room recently became a big problem when we increased the number of spinning frames in the room from 38 to 95.

The frames are used to spin yarn principally for surgical gauze, 80-square print cloth, and gauze diapers.

Before the number of spinning frames was increased, lint accumulated on the eliminator blades (baffles) was cleaned each week end.

But after the 57 extra spinning frames were added, lint accumulated on the eliminator blades so rapidly during air recirculation that it was difficult to obtain proper humidity in the room. Therefore the unit had to be stopped frequently during the work week to clean the baffles.

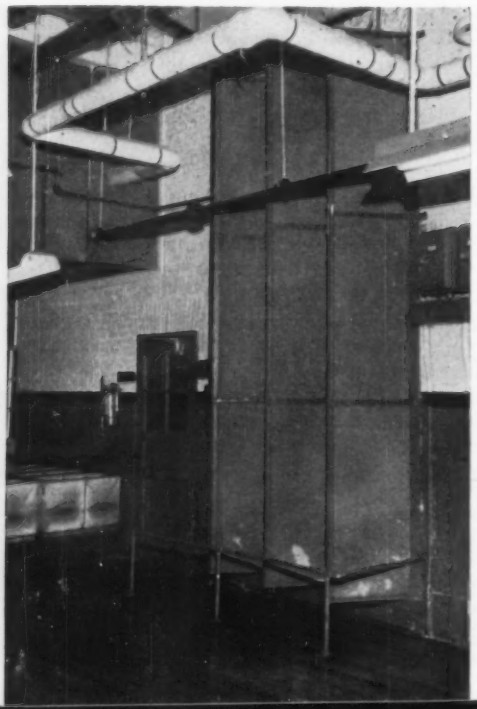
At this same time, a related and equally serious problem developed involving the filter screens in the water line serving the spray heads.

Excess water from these spray heads normally falls into a tank. Then the water is picked up again by a large centrifugal pump and is pumped back through the spray heads. An automatic float valve maintains the proper level in the tank.

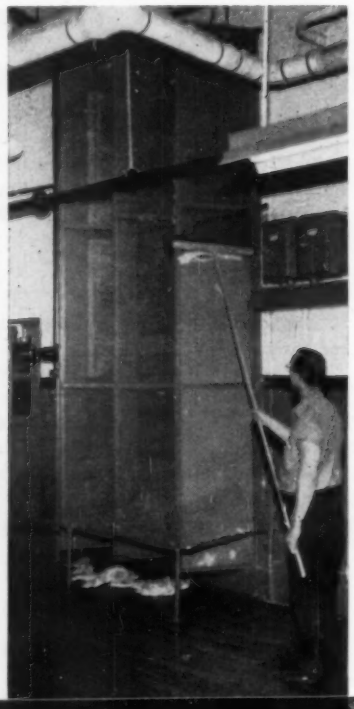
The water passes through a filter screen after it leaves the tank and before it reaches the pump. Because of the heavy lint accumulation from the additional 57 spinning frames, the screen had to be cleaned every 2 hrs., and sometimes more frequently.

Taken together, the two problems required (1) screening out as much lint as possible and (2) preventing any restriction of air flow back to the central station. These problems pointed up the need for a filter material that could be cleaned and maintained with minimum work.

AT 3 P.M., lint completely covers all six sections of this saran-covered frame at the central-station air washer in one of Chicopee's spinning rooms.



AT 3:03 P.M., lint has been removed from all six sections of the frame. For most sections, only one downward stroke of the brush is needed.



Saran Eliminated Both Problems

Since none of the standard filters did the job, we obtained 18x14-mesh woven saran from our Lumite Div. at Cornelia, Ga. This fabric met the specific needs of the job and was easy to maintain, but the problem of airflow restriction remained.

To minimize this restriction, we designed the saw-toothed frame, shown in the accompanying sketch, for the screening.

The saw-toothed frame has three wall openings for the central-station air return; each opening is 7 ft. wide and 10 ft. high. Three separate frames were constructed primarily from 1¼-in. angle iron.

CONTINUED ON PAGE 146

South Carolina Weavers Increase Machine Speed

• Weave-room men at the spring meeting of STA reported they are increasing slasher speed and loom speed. One mill runs multicylinder slashers 155 yds. per min., and one mill runs 40-in. E-model looms 190 ppm.

OVER 700 MILL MEN attended the spring meeting of the South Carolina Div., Southern Textile Association, at Fairforest, S. C., as guests of Reeves Bros., Inc. A large segment of these men pooled their ideas on slashing and weaving problems in a separate discussion group.

Of 11 questions submitted by members on slashing problems, six were about slasher speed.

Mill experience shows there's a limit on slasher speed if looms are to run at highest efficiency.

On nine-cylinder slashers with multimotor drives, and two size boxes, broadcloth and piqué run at 110 yds. per min. The two sheets of yarn from the two size boxes are brought together at the first cylinder.

Warps have 4,000 ends of 30s yarn. Warps are leased at every warp, and often more often. But ends stick together at this speed.

Better weaving has resulted since the speed was reduced to 80 yds. per min. There are fewer stuck ends, and warps are leased only at every second warp. Size pickup did not change with the reduced speed. Moisture regain is 7 to 7½%.

Slasher Speed Is 155 Yds. per Min.

On multicylinder slashers at a second mill on 80-square cloth, slasher speed is 100 to 155 yds. per min. To run slashers at this speed, slasher mechanical condition, settings, and size must be as near perfect as possible. Weave-room efficiency is higher at this slasher speed than at the former lower speed.

Size pickup is 12½% as controlled by the customer. After desizing, 8 to 8½% size is in the cloth.

Moisture content is 8%, and there's no trouble with soft warps in weaving. But at 8½%, there were soft warps.

Mill men generally agree that: (1) size pickup increases as slasher speed increases, (2) stretch control decreases at higher speed, and (3) warp-end breakage is not excessive at higher speed.

Mills had very little experience with 100%-rubber squeeze rolls; so they could not make a comparison between the performance of these rolls and synthetic-rubber rolls. But one mill has more film left on the outside of yarn with 100%-rubber rolls.

All mills are keeping warp stretch below 2% with the average 1½ to 2%.

Loom speed was the question of greatest interest in the weaving discussion, with one mill generating unusual interest by reporting running 40-in. E.-model looms at 190 ppm. on light prints and gauze.

Forty looms are being tested at 190 ppm. against 40 looms at 180 ppm. All looms have been run at 180 ppm. for five years.

The looms are motor driven, do not have spreaders, and run a 17-tooth motor gear.

There is no more weave-room trouble at 190 ppm. than at 180. Supply cost isn't affected. At given times, the faster looms have lower supply cost and higher weave-room efficiency.

Dobby-equipped 40-in. E-model looms at this same mill run 176 ppm. Weavers run 115 cam looms and 90 dobby looms.

Looms are cemented to wood floors on mounting pads, with some looms on the third floor. Plastic shuttles 16 ins. long are used, and bobbins are 8¾ ins. long.

Other mills are running similar 40-in. E-model cam looms somewhat slower.

Without spreaders, speed by mills is 165, 156, 172, and 175 ppm. With spreaders, speed is 172 ppm.

New Pickers Give Good Results

Plastic shuttles are giving much greater loom life than dogwood shuttles on X-2 and E-model looms; one mill is getting more than 3½ times as much life. Reports of three mills are:

Dogwood	Plastic
6 months	2½ years
4 to 6 months	18 months
2,000 loom hours	7,000 loom hours

The new-type polyethylene picker, although considered very expensive, is giving excellent results at one mill on 42-in. X-2 looms running 178 ppm. on 8¾-in. bobbins in plastic shuttles. Ordinary loom pickers last 10 weeks on these looms, but polyethylene pickers are still running after several months.

Mills Change to 8¾-In. Bobbins

Mills that have not already changed loom bobbins from 8 ins. to 8¾ ins. are considering this change.

One mill made this change on 40-in. E-model looms but is having more broken filling at the loom.

Instead of changing only the lay-end plates, this mill changed the entire lay to get a better job. The parallels were also changed.

One mill made this change with excellent weaving results and reported that the critical phase of the change is in training employees on the new setup. Seconds will be higher if supervisors are not constantly alert until weavers, loomfixers, and batteryhands are thoroughly trained.

Mills are also changing 24-in.-dia. and smaller loom yarn beams to 26-in. beams on E-model looms. In some mills, this change causes trouble at let-offs when warps run down to about the last 150 yds.

This trouble is caused by the back girder on some looms. On other looms, the girder is positioned so that there's no trouble.

To correct this trouble, the back girder must be turned or replaced. And this change often calls for changing the widthwise girder also.

Quality Control—

Count Ends Down the Easy Way

The ratio-delay method of statistical measurement offers an effective tool for predetermining yarn quality by eliminating conventional "follow-the-spinner methods" of checking ends down at spinning. A random sampling is all that's needed. Highlights—

- **What ratio-delay control can do**
- **How the system benefited an 80,000-spindle mill**
- **How to set up the system**
- **Advantages over conventional methods**

By RICHARD WATKINS, Industrial Engineer

RATIO-DELAY is a system for making random observations of operating conditions within a given area and determining from these observations the average operating conditions within that area. Its importance in textiles stems from the fact that considerable accuracy can be gained over large areas with a minimum investment of time and personnel.

This method of statistical control, applicable to many textile operations, provides simultaneous information on all machines within a given department. Only a fraction of the number of frequency checkers normally required are needed.

Cost of installing the control technique, aside from a modest outlay for a brief indoctrination period, is practically zero. The mathematical approach is sound, and the technique is simple. But the information is worthless unless a mechanical follow-up is planned immediately.

As applied to spinning, the technique is not difficult. The observer, equipped with a timestudy board and a frame layout of the entire room, walks a predetermined route through the spinning room so that he can observe each frame side individually. He should not attempt to observe two adjacent sides simultaneously or the results may be inaccurate. Each spindle is observed just as the operator's shoulder is brought alongside the corresponding roving bobbin or bobbins.

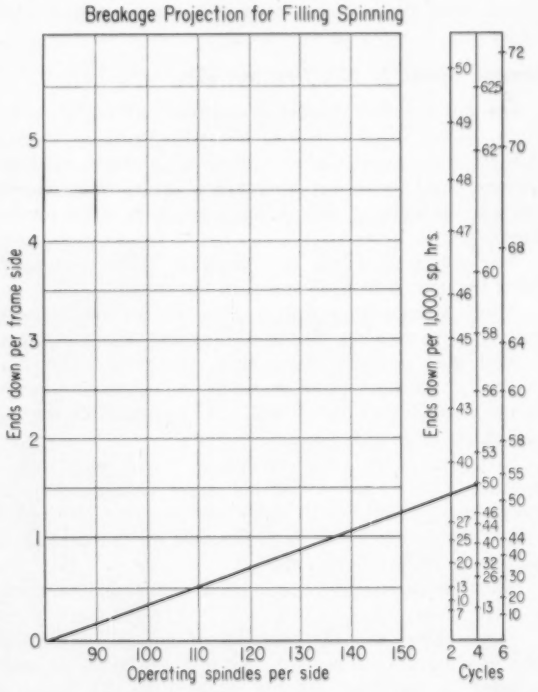
The observer makes a mental note of each break and records the total number per side directly on the layout by frame number. In actual practice, the observer need never break his stride because the physical recording of breaks is timed to the operator's walk between frames. All idle spindles caused by tapes off and the like are noted and the total number per side is circled. Any frames idled by doffing, traveler changing, etc., are coded on the layout.

After he gains experience, the observer can record in general classifications the causes of breakages such as roving broken back, yarn broken at front roll, yarn broken at traveler, or unknown. However, initially it is not wise to burden the observer with this task.

In traversing the route, the observer makes no distinction between spinner sets or yarn-number groupings. This breakdown is determined subsequent to the study. Upon completion of his itinerary, the observer is in possession of data relating to the breaks by frame and yarn number and readily discernible causes.

The breaks are separated and totaled by spinner sets and yarn-number blocks or both for comparative purposes. Accuracy demands that the observer conduct a minimum of three random patrol cycles and observe at least 60,000 spindles. For a room of 15,000 spindles, for example, the observer should make four random patrol cycles per shift before calculating ends down per 1,000 sp. hrs.

In calculating ends down per thousand spindle hours, it is necessary to determine the spinner's patrol cycles per hour. With these data, the calculation of the ends down



GRAPH is used to convert ends down per side into ends down for the entire mill. In this instance, 1.25 ends down per 150-spindle side represents an average of 50 ends down per thousand spindle hours for 80,000 spindles.

per 1,000 sp. hrs. is easy with this formula:

$$\text{Ends down} = \frac{2 \times \text{ends down (average)} \times \text{spinner patrol cycles} \times 1{,}000}{\text{Total spindles operating}}$$

The multiplier 2 is based on the Law of Probability and is used to average the conditions within a set. The figure for "total" spindles operating is total spindles minus idle spindles.

Since it is obvious that the spinner patrol cycles per hour will vary according to the ends-down level, the patrol cycles must be calculated to meet the average operating conditions for the day.

Spinners' work should be measured and the spinners assigned according to workload. Then it becomes a process of determining the ends down per spinner patrol cycle and equating this figure to a time value and dividing the time value into that allowable portion of the spinner hour designated for break repair work.

Example:

1. Spinner assignment at 120% performance (sides)	20
2. Spindles per side	150
3. Ends down noted by observer	25
4. Allowable minutes per hour for repair and patrol	27
5. Allowable minutes per break repair including miscellaneous work such as repairing lap-ups	0.13
6. Allowable minutes per patrol cycle	2.5
7. Standard patrol cycles per hour	4
8. Standard ends down per 1,000 sp. hrs.	44

Calculate in Terms of Sides

It is better from a practical viewpoint to express all information in terms of side functions such as patrol time per side-cycle, allowable break work per side-hour, etc. This conversion minimizes difficult situations that may arise when side assignments vary because of yarn number.

This conversion would have the following effect on the preceding job information:

Ends down per side—$25 \div 20 = 1.25$

Available minutes per side-hour for break work—$27 \div 20 = 1.35$

Allowable minutes per side-cycle for patrol—$2.500 \div 20 = 0.125$

Here's how to determine patrol cycles per hour at a 120% performance:

Ends down per spinner side-cycle—$2 \times 1.25 = 2.5$

Here again the multiplier 2 is necessary to average conditions, and the 1.25 is the average number of ends down observed per side.

Total time spent per cycle on repair—patrol time per side plus break repair time, or $1.25 \text{ mins.} + 2.5 \times 0.13 = 0.45$ mins. per side-cycle.

Cycles per hour—$1.35 \text{ mins.} \div 0.45 = 3$

From these calculations, it can be seen that instead of the standard four patrol cycles per hour, the spinner can complete only three because of the high ends-down figure. To calculate and determine actual ends down per 1,000 sp. hrs., the formula with substitutions is:

$$\text{Ends down} = \frac{2 \times 1.25 \times 3 \times 1{,}000}{150} = 50$$

This answer compares with the job standard of 44. Had the standard of 4 been substituted for spinner cycles per hour, the answer would have resulted in a gross exaggeration of 66. To have made four cycles, the spinner would of necessity have been derelict on other duties or would have maintained a performance level of 138% for the hour, which is unlikely.

Calculations Can Be Graphed

These calculations can be graphed to keep the frequency checker from having to make them. A graph is easily plotted after several calculations have been made to obtain data, and the result is a simple log curve. The accompanying graph is used at the 80,000-spindle mill referred to in this article.

The three line graphs down the right-hand side of the graph designate two, four, and six cycles per hour. These graphs depict standard cycles per hour and are not to be confused with actual. It is necessary to distinguish between jobs in this manner because the relationship of break work to other work varies as the standard cycles vary.

To find ends down per thousand spindle hours, determine the intersection of the horizontal ordinate designating average ends down per side and the vertical line designating operating spindles per side; then describe a line through the origin and this intersection. The answer is where this line intersects the appropriate graph.

Conventional Method Is Limited

The conventional method of follow-the-spinner checking, though detailed in result, is limited because the study is confined to a small sample area such as one spinner's set. This limitation means that:

1. Frame-to-frame comparison covering the entire room is impractical.

2. Spinner-to-spinner comparison is expensive and requires simultaneous checks.

3. Yarn number-to-number comparison is expensive and requires simultaneous checks.

Break checks obtained at different times cannot be compared with confidence because they include outside influences such as changes in the weather or cotton fiber.

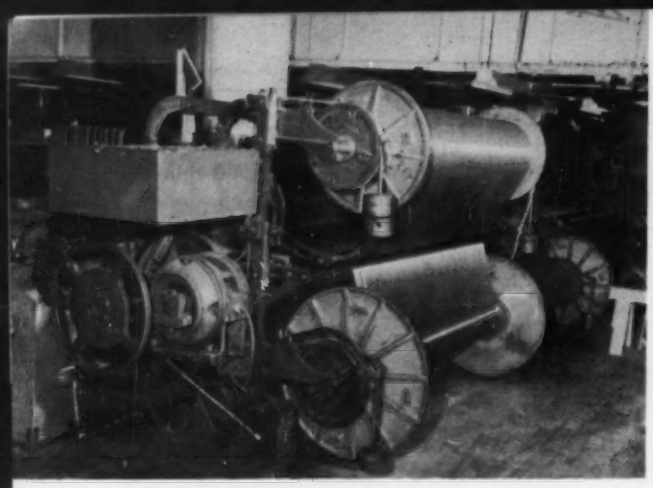
CONTINUED ON PAGE 146

Ratio-Delay Cuts Spinning Cost

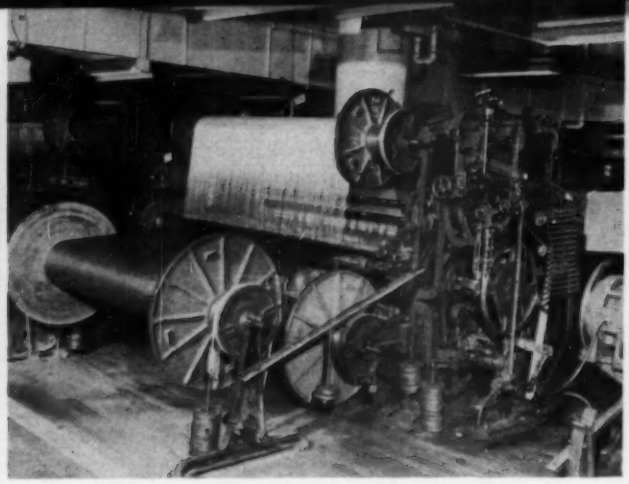
A Southern mill with more than 80,000 spindles reduced ends down substantially by installing the ratio-delay control method of checking spinning end breakage. The mill is netting big savings in direct labor cost and waste and has reduced its complement of frequency checkers to a fraction of the number formerly required.

Intangible savings, such as the production of fewer malformed bobbins, are considerable. Moreover, the mill is able to quickly spot frames with excessive end breakage and take immediate corrective action.

Application of the system in this mill has proved to be 95% accurate as compared with conventional methods of counting ends down.



TOP BEAM is unslashed prestretched polyethylene yarn. Bottom beam can be any other fiber.



THREE BEAMS can also be used. Again the top beam is polyethylene, and the other two beams are other fibers.

How Mills Weave

• One of the newest fabric developments gives a textured effect with standard loom motions. The fabric is made from standard fibers woven with prestretched polyethylene yarn. Here's how the fabric is woven—

HALF-A-DOZEN MILLS are currently weaving prestretched polyethylene yarn in fabric mixtures with many other fibers. The fabric is flat while it is being woven on the loom but forms puffs and many other desired shapes when it is immersed in water at 208° F. Fabric thickness can be controlled anywhere between ⅛ and 1 in.

The polyethylene yarn is woven from a separate yarn beam. Then when the fabric is run through boiling water a few seconds, the polyethylene yarn returns to its original length and puffs are formed.

Fabric Has Many Uses

The fabric is being used primarily for furniture upholstery but is also used as upholstery of automobiles and airplanes. Other applications are draperies, bedspreads, and carpeting.

The chief advantages of the fabric for upholstery uses are: (1) unusual comfort, (2) free circulation of air between a person and the furniture or car seat, (3) long-lasting qualities, and (4) it stretches enough to fit seat contours.

The fabric can be woven successfully on single-shuttle looms, but most mills are using multishuttle looms. A great number of patterns are woven from two and three yarn beams and from one to four colors or types of filling. Many patterns simulate jacquard weaves.

Fibers being woven at one mill with the polyethylene yarn are saran, nylon, viscose, linen, cotton, spun rayon, and filament rayon. But any other fiber can be used. One pattern, for example, has a ground beam of 22/2 spun nylon, a polyethylene top beam, and metallic filling yarn.

Standard Looms Are Used

The cloth is woven 58 to 66 ins. wide on the 78-in. C-4 looms. Warps contain 4,000 to 10,000 ends. The picks per inch range from 8 to 38. The polyethylene ends float from 15 to 20 picks and are woven in every other pick up to as many as 30 picks.

Polyethylene yarn is bought already on the yarn beam; it is not sized. Filament nylon yarn is bought already dyed and sized on the yarn beam. Linen, cotton, spun-rayon, and all other staple yarns are made at the mill, where they are also slashed. All single yarns are slashed, two-ply yarns as fine as 30s are slashed, and all ply yarns above 30s are not slashed.

There are no unusual weaving problems when polyethylene yarn is used. At present all warps are drawn in, but a tying-in machine can be used. At drawing in, the ends have to be drawn from an end-to-end lease for hand drawing.

The tension on all yarn beams at the loom is controlled with friction bands and weights. The tension is adjusted to the best running conditions. No special loom attachments are used anywhere on the loom.

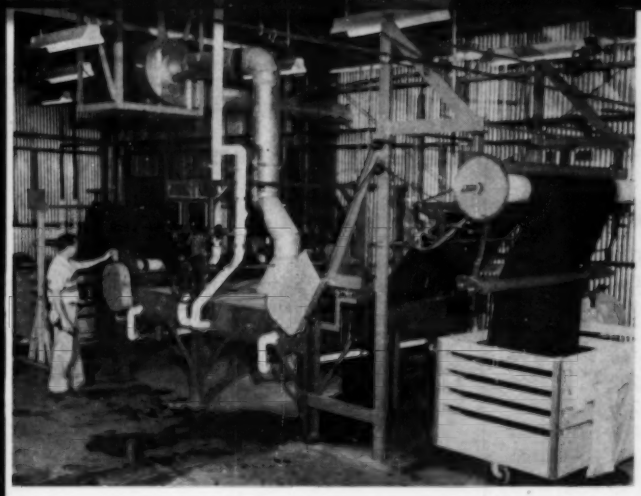
The looms are equipped with dobbies, and 12 to 25 harnesses are used on the polyethylene fabrics. The harnesses are timed to cross anywhere from 1½ ins. before front center to dead-front center, according to the basic fibers of the ground beam.

Drawtex harnesses give best results, and close harness settings are very important for highest production. Dobbies have to be in good mechanical condition and must be divided perfectly.

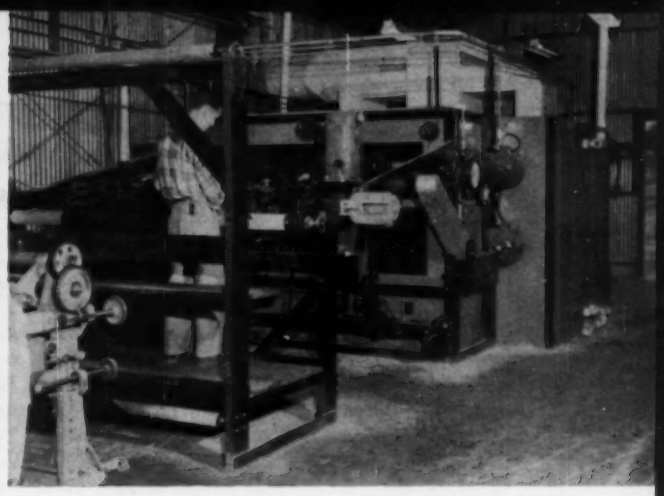
Synthetic-rubber take-up roll covers are used where the basic weave is filament fibers, and abrasive covers are used for spun fibers.

Drop wires have four to six banks according to the number of ends in the warp; warps with 10,000 ends have six banks.

Temples with two rolls in the bottom and one roll in



SHRINKING MACHINE is filled with water held at 205 to 210° F. Shrinking is controlled at any given percentage.



SHRUNK CLOTH enters the pin tenter and hot-air dryer for the final finishing operation.

Polyethylene Yarn

the cap are used. The temple rolls are combination rolls with a synthetic-rubber section inside and pinned burrs for 1 in. outside. Pattern chains vary in length from eight bars to several hundred.

Because the shrinkage of fabric in finishing is controlled closely anywhere between 25 and 40%, the length of rolls of cloth at the looms is also controlled closely. The looms are equipped with cut meters to give accurate-length rolls of cloth. Normal rolls are 70 to 80 yds. long.

The 78-in. looms run at 122 ppm. on most styles of polyethylene. The speed is determined by the number of loom beans and number of shuttle boxes in operation.

The filling is changed automatically by the magazines, and weavers fill their own magazines. The number of looms per weaver is normal for three- and four-shuttle patterns.

Weave-room humidity is 75%, and the temperature is 85° F.; this humidity condition is normal for pattern weaving at the mill.

How Cloth Is Inspected

Cloth is inspected in the cloth room as soon as it is doffed from the looms. Then it is given a final inspection and is graded after it is finished.

The first inspection is made on an inspecting machine. The inspector also burls minor defects, and loose strings are removed from both selvages.

A minor defect, such as an oil spot, broken pick, or thin place, is tagged with a red string. For a minor defect, ½ yd. of cloth is given to the buyer so that the bad place can be cut out.

A white string is used to tag warp defects of broken ends, slack ends, etc. One-half the length of the defect is given to the buyer. For example if an end runs out for 2 yds., an allowance of 1 yd. is made.

Yellow strings are used to tag general defects in either the warp or filling. Allowance for the full length of the defect is made.

As soon as the fabric is inspected, it is sent to the finishing department nearby. The finishing operation is primarily a shrinking operation; but on some styles of fabric, desizing and piece-dyeing are done.

Desizing and dyeing, if necessary, are done in a standard piece-dyeing machine. Often desizing and dyeing are done in one operation. However, most fabrics have been yarn-dyed. If the fabric is to be fully shrunk, shrinking is also done at the desizing and dyeing operation. The temperature of the dye liquor is held between 205 and 210° F. for shrinking because polyethylene melts at 240° F. The fabric can be dyed without shrinking up to 180° F.

The shrinking machine was built to the specifications of men at the mill by an outside shop. It is a covered metal box approximately 8 ft. wide, 12 ft. long, and 14 ins. deep. The box is on legs and is filled with hot water held constantly between 205 and 210° F.

Fabric Shrinks 40% in Finishing

The fabric is taken from a truck and is run between two air guiders. It enters and leaves the shrinking box by two slots cut in the cover. Two sets of feed rolls control the cloth. One set feeds the cloth in, and another set draws it out. The speed of each set of rolls is positively controlled, and therefore shrinkage is controlled between 25 to 40%. But the polyethylene yarn is capable of shrinking up to 60%.

The shrunk cloth is fed directly to a pin tenter and hot-air dryer. The fabric goes through the dryer at 203° F. Since contraction is fully controlled in the shrinking machine, no further shrinkage takes place in the dryer. Rolls of cloth 70 to 80 yds. long, (loom length) are finished at 50 to 55 yds.

The fabric can be made flameproof or given any other conventional treatment where the processing temperature does not exceed 240° F.

Cloth is returned to the regular cloth room for finished inspection and final grading. Many of the red strings put in in the first inspection are removed because finishing corrects minor defects such as light thin places. Then the rolls of cloth are packed one to a packing case for shipping.

Table 1—Production Data for Cards with 24-in. Doffer

Doffer speed (rpm.)	Sliver weight (grains per yard) 45	50	55	60	65	70
1	0.8331*	0.9256	1.0182	1.1108	1.2034	1.2959
2	1.6662	1.8512	2.0364	2.2216	2.4067	2.5918
3	2.4993	2.7768	3.0546	3.3324	3.6101	3.8877
4	3.3324	3.7024	4.0728	4.4432	4.8135	5.1836
5	4.1655	4.6280	5.0910	5.5540	6.0168	6.4795
6	4.9986	5.5536	6.1092	6.6648	7.2202	7.7754
7	5.8317	6.4792	7.1274	7.7756	8.4236	9.0713
8	6.6648	7.4048	8.1456	8.8864	9.6270	10.3672
9	7.4979	8.3304	9.1638	9.9972	10.8303	11.6631

*Pounds per hour

CARD PRODUCTION is figured at 100% efficiency; ¾ in. is added to the doffer diameter to compensate for the wire clothing.

Card-Room Calculations Are Easy With These Tables

• Here are several carding, drawing, and roving production-data tables that greatly simplify card-room mathematics and make production control easier for the overseer. The tables can be modified to suit local conditions.

By N. H. POMFRET

THERE ARE MANY WAYS to control production in the card room that range from changing gears to varying the number of machines in use. Regardless of the method, the accompanying tables, if properly used, can save the overseer a great deal of time and trouble.

Card production, as measured by weight of stock, must be changed frequently in any mill that produces a wide range of yarn numbers and quality. This condition calls for changes in doffer speed if the card is to run at maximum efficiency.

Tables 1 and 1A for 24- and 27-in. doffers are designed to show the overseer the card production rate at 100% efficiency. In each case, ¾ in. is added to the doffer diameter to compensate for the thickness of the clothing.

Table 1A—Production Data for Cards with 27-in. Doffer

Doffer speed (rpm.)	Sliver weight (grains per yard) 45	50	55	60	65	70
1	0.9340*	1.038	1.1416	1.2454	1.3492	1.453
2	1.8681	2.076	2.2832	2.4908	2.6984	2.906
3	2.8021	3.114	3.4248	3.7362	4.0476	4.359
4	3.7362	4.152	4.5664	4.9816	5.3968	5.812
5	4.6002	5.190	5.7080	6.2270	6.7460	7.265
6	5.6043	6.228	6.8496	7.4724	8.0952	8.718
7	6.5383	7.266	7.9912	8.7178	9.4444	10.171
8	7.4724	8.304	9.1328	9.9632	10.7936	11.624
9	8.4064	9.342	10.2744	11.2086	12.1428	13.077

*Pounds per hour

CARDING DATA in this table are used in the same manner as the figures in Table 1. The only difference is in the diameter of the doffer.

Stoppages Affect Production

Actual production of cards depends on the stripping, grinding, and overhauling practices in use at individual plants. When the downtime caused by these stoppages is determined, it is easy to calculate production efficiency and set up some figures, such as Table 2, which show production data at a glance.

Table 1 is used as a basis for the calculations in Table 2. For example, to find 60-grain-sliver production per hour where doffer speed is 12 rpm., the calculation after adjusting decimals is:

10 rpm. = 11.108 lbs.
2 rpm. = 2.2216 lbs.

12 rpm. = 13.3296 lbs.

Table 2—Production Gear and Doffer Speed for Cards

Production gear (teeth)	Doffer speed (rpm.)	Sliver weight (grains per yard) 50	55	60	65	70
18	7.07	6.78*	7.46	8.14	8.82	9.50
19	7.46	7.15	7.87	8.59	9.30	10.02
20	7.85	7.53	8.29	9.04	9.79	10.55
21	8.24	7.91	8.70	9.49	10.28	11.07
22	8.64	8.28	9.11	9.94	10.77	11.60
23	9.03	8.66	9.53	10.40	11.26	12.13
24	9.42	9.04	9.94	10.85	11.75	12.65
25	9.82	9.41	10.36	11.30	12.24	13.18
26	10.21	9.79	10.77	11.75	12.73	13.71
27	10.60	10.16	11.18	12.20	13.22	14.24
28	11.00	10.54	11.60	12.66	13.71	14.76
29	11.39	10.92	12.02	13.11	14.20	15.29
30	11.78	11.30	12.43	13.56	14.69	15.82

*Pounds per hour

PRODUCTION FIGURES shown here are for a department having 40 cards with 27¾-in. doffers working at 92.5% efficiency. Stoppages are average.

To produce 10,000 lbs. of 60-grain sliver per 80-hr. week with a 26-tooth production gear, Table 2 shows that total hourly production is: 10,000 (lbs.) ÷ 80 (hrs.) = 125 lbs. Where the 26-tooth gear produces 11.75 lbs. per hr., the number of cards required is: 125 (lbs.) ÷ 11.75 (lbs.) = 11 cards (approx.).

Where 15 cards are assigned to produce 10,000 lbs. of 50-grain sliver per 80-hr. week and the total hourly production is 125 lbs., hourly production per card is: 125 (lbs.) ÷ 15 (cards) = 8.33 lbs.

The table indicates that a 22-tooth production gear is needed to produce 8.28 lbs. of sliver per hour, the closest figure to 8.33 lbs.

How To Calculate Efficiency

When an overseer has to know the production efficiency of drawing, roving, or spinning frames in a hurry, it is a waste of time and money to wait for the weekly efficiency report. Actual production can be taken from hank clocks, but 100% efficiency has to be calculated. Table 4 is designed to make the calculations easy.

For example, to find 100% production efficiency in hanks where roll diameter is 1⅛ in. and roll speed is 156 rpm., the calculation is:

100 rpm. = 5.298 hks.
50 rpm. = 2.649 hks.
6 rpm. = 0.318 hks.

156 rpm. = 8.265 hks.

In calculating the production of drawing frames, surface speed of the front roll can be quickly determined by referring to Table 4 and using this figure in conjunction with Table 5. For example, if surface speed is 125 ft. per min. and there are four deliveries of drawing, the calculation is:

100 ft. per min. = 68.57 lbs.
20 ft. per min. = 13.71 lbs.
5 ft. per min. = 3.43 lbs.

125 ft. per min. = 85.71 lbs.

Table 3—Hank Production per 8 Hrs. for Drafting Machines

Front-roll speed (rpm.)	Roll diameter (ins.) 1	1 1/16	1 1/8	1 3/16	1 1/4	1 5/16	1 3/8	1 7/16	1 1/2	1 9/16	1 5/8
1	0.04987*	0.05298	0.05610	0.05922	0.06233	0.06545	0.06857	0.07168	0.0748	0.07792	0.08103
2	0.09973	0.10597	0.11220	0.11843	0.12466	0.13090	0.13713	0.14336	0.1496	0.15583	0.16206
3	0.14960	0.15895	0.16830	0.17765	0.18699	0.19635	0.20570	0.21505	0.2244	0.23375	0.24310
4	0.19946	0.21193	0.22440	0.23686	0.24932	0.26180	0.27426	0.28673	0.2992	0.31167	0.32413
5	0.24933	0.26491	0.28050	0.29608	0.31165	0.32725	0.34283	0.35841	0.3740	0.38958	0.40516
6	0.29920	0.31790	0.33660	0.35529	0.37398	0.39270	0.41140	0.43010	0.4488	0.46750	0.48620
7	0.34906	0.37088	0.39270	0.41451	0.43631	0.45815	0.47996	0.50178	0.5236	0.54541	0.56723
8	0.39893	0.43286	0.44880	0.47373	0.49864	0.52360	0.54853	0.57346	0.5984	0.62333	0.64826
9	0.44879	0.47685	0.50490	0.53295	0.56097	0.58905	0.61709	0.64515	0.6732	0.70125	0.72930

*Hanks

DRAWING, ROVING, AND SPINNING EFFICIENCY at 100% production can be calculated in terms of hanks produced per 8-hr. shift by using this table.

Table 4—Drawing-Frame Roll-Surface Speeds

Front-roll speed (rpm.)	Roll diameter (ins.) 1 1/8	1 3/16	1 1/4	1 5/16	1 3/8	1 7/16	1 1/2	1 9/16
1	0.2945*	0.3109	0.3272	0.3436	0.3600	0.3763	0.3927	0.4090
2	0.5890	0.6217	0.6545	0.6872	0.7199	0.7527	0.7854	0.8181
3	0.8835	0.9326	0.9817	1.0308	1.0800	1.1290	1.1781	1.2272
4	1.1780	1.2435	1.3090	1.3744	1.4400	1.5053	1.5708	1.6362
5	1.4725	1.5544	1.6362	1.7180	1.8000	1.8817	1.9635	2.0453
6	1.7670	1.8653	1.9635	2.0617	2.1600	2.2580	2.3562	2.4543
7	2.0616	2.1761	2.2907	2.4053	2.5200	2.6344	2.7489	2.8634
8	2.3561	2.4870	2.6180	2.7489	3.8800	3.0107	3.1416	3.2725
9	2.6506	2.7979	2.9452	3.0925	3.2400	3.3870	3.5343	3.6815

*Feet per minute

SURFACE SPEED of front rolls on drawing frames can be quickly determined by referring to this table. The data are used in conjunction with Table 5 to calculate production.

Table 5—Drawing-Frame Production for 60-grain Sliver

Deliveries	Feet delivered per minute at 100% efficiency 1	2	3	4	5	6	7	8	9
1	0.1714*	0.3428	0.5143	0.6857	0.8571	1.0286	1.2000	1.3714	1.5429
2	0.3428	0.6857	1.0286	1.3714	1.7143	2.0572	2.4000	2.7429	3.0858
3	0.5143	1.0286	1.5429	2.0571	2.5714	3.0858	3.6000	4.1143	4.6287
4	0.6857	1.3714	2.0572	2.7429	3.4286	4.1144	4.8000	5.4857	6.1716
5	0.8571	1.7143	2.5714	3.4286	4.2857	5.1430	6.0000	6.8572	7.7145
6	1.0286	2.0571	3.0857	4.1143	5.1429	6.1716	7.2000	8.2286	9.2574
7	1.2000	2.4000	3.6000	4.8000	6.0000	7.2002	8.4000	9.6000	10.8003
8	1.3714	2.7429	4.1143	5.4858	6.8572	8.2288	9.6000	10.9715	12.3432
9	1.5429	3.0857	4.6286	6.1715	7.7143	9.2574	10.8000	12.3429	13.8861

*Pounds per hour

DRAWING-FRAME PRODUCTION refers only to 60-grain sliver produced at 100% efficiency, but the method can be used for calculating any sliver weight at any efficiency.

The production figures in Table 5 apply only to 60-grain sliver produced at 100% efficiency, but the figures may be used as a basis for calculating any sliver weight at any efficiency. For example, to figure the production of four deliveries of 50-grain sliver at 80% efficiency where speed is 200 ft. per min., the calculation is:

$$137.14 \times \frac{50}{60} \times \frac{80}{100} = 91.4 \text{ lbs. per hr.}$$

Since most plants fix the speeds of drawing frames at a given rate, it is both practical and convenient to draw up a table that gives production directly. Table 6, which shows production for a delivery rate of 150 ft. per min. and 80% efficiency, illustrates how the figures should be set up.

Table 6—Drawing-Frame Production at 150 Ft. per Min.

Deliveries	Sliver weight (grains per yard) 50	55	60	65	70
1	17.14*	18.86	20.57	22.28	24.00
2	34.28	37.71	41.14	44.56	48.00
3	51.42	56.57	61.71	66.84	72.00
4	68.56	75.43	82.28	89.12	96.00
5	85.70	94.28	102.85	111.40	120.00
6	102.84	113.14	123.42	133.68	144.00
7	120.08	133.00	144.00	155.96	168.00
8	137.12	151.85	164.57	178.24	192.00
9	154.26	170.71	185.14	200.52	216.00

*Pounds per hour

DRAWING-FRAME SPEED is seldom changed in most plants; so it is both practical and convenient to set up a table based on standard operations.

Textile Automation—

Electronics at Weaving Mill Punches Jacquard Designs

• Coloring designs by hand is out at these jacquard-weaving mills because this electronic machine eliminates most of the designer's job. Here's how one girl punches all jacquard cards for a group of mills.

OPERATOR is trained quickly to scan the sketch and punch the correct keys. Four rows of cards are punched electronically and simultaneously.

AN ELECTRONIC JACQUARD CARD-PUNCHING MACHINE is helping Albert J. Bartson Co. get a fast start in delivering newer designs in upholstery fabrics. Bartson, with mills in Midland Park, N. J., and Lavonia, Ga., is punching designs electronically for all looms.

With the machine, an artist's sketch is translated directly into jacquard cards without the tedious manual transition from picture to check paper and then to jacquard cards.

Within 24 hrs. after a design idea is created, the fabric is being woven at the Bartson mills.

Before the new machine was developed, Bartson used this procedure in making new designs:

The mill designer copied the artist's design onto cross-section paper at a drafting board.

The design was transferred to full size on design paper with drawing instruments for geometric patterns and free-hand sketching for complicated floral and pictorial patterns. Often several sections were necessary for multiple-ply weaves.

Each small square was painted in water colors with the color specified on the original design.

Then this full-size design was given to card cutters who cut the patterns in card-punching machines. A cutter had to follow in exact sequence the design marked on the cross-section paper as he depressed the keys in the machine.

A second punching operation had to be made for holes to be used in the lacing machine.

Girl Operator Starts With Sketch

But with electronic card punching the setup is changed entirely:

Punching starts directly from the artist's original sketch. The old card-cutting machines and the operators are eliminated.

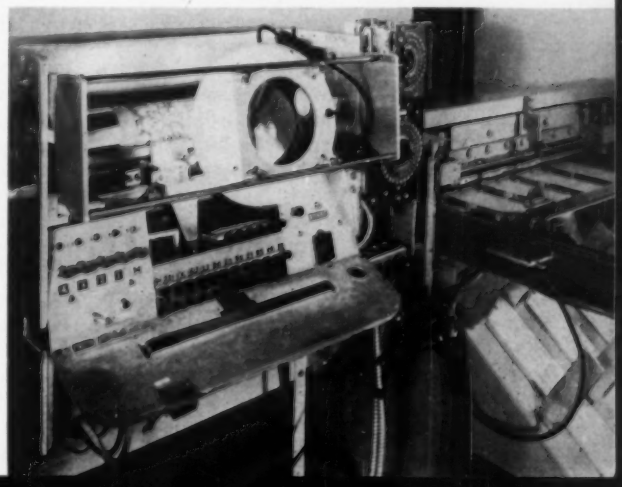
In place of the operators, there's one girl who was quickly trained to operate the electronic machine. Within one month she was punching 300 to 400 cards in 8 hrs.

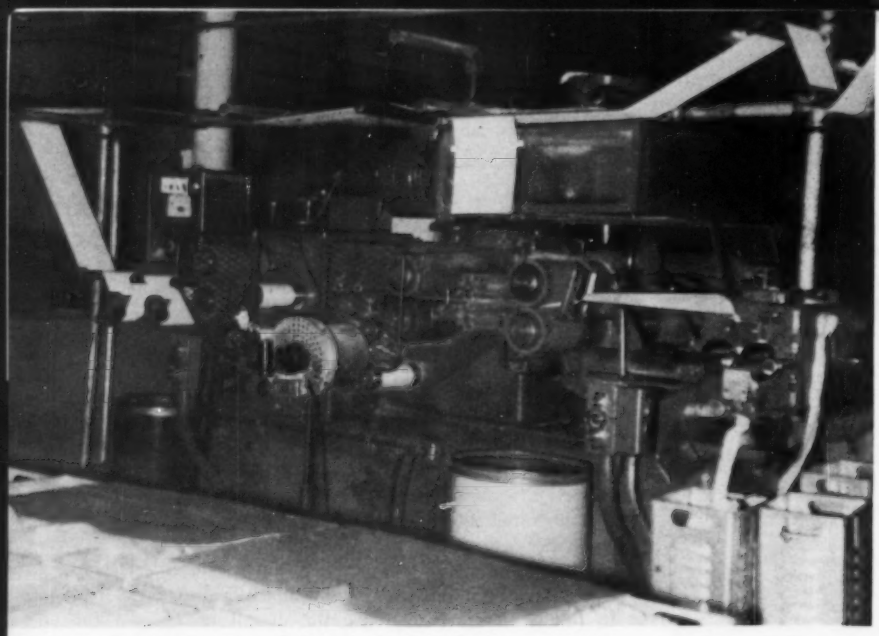
She reads the artist's sketch through a high-powered, wide-field, industrial magnifier. The artist's sketch is threaded around a roll much as a sheet of paper is placed on a typewriter.

As a reciprocating marker moves over the sketch, the girl touches one of twelve keys that directly control card punching, which is done electronically. Sixteen holes are punched in each card, and four separate cards are going through the machine at once. On multiple-ply weaves all these cards are of different designs.

CONTINUED ON PAGE 144

ARTIST'S SKETCH is scanned by the operator through the magnifier, and she manually depresses the keys to activate weaves.





ORLON TOW is stretched, broken, and drafted on the Turbo stapler to form a sliver.

How American Thread Co. Blends High-Bulk Orlon with Wool

• Blends of 4.5-den. stretched Orlon, 3-den. relaxed Orlon, and 64s quality wool produce jersey knitting yarns that give fabrics good hand and drape. Key operations in the manufacture of these yarns are stretching, breaking, relaxing, blending, pin drafting, roving, and spinning.

By VICTOR SAXL

GOOD DRAPE AND HAND are given to fabrics made from blends of high-bulk Orlon and wool. American Thread Co., Willimantic, Conn., specializes in making these yarns, most of which contain 20% wool. The yarns are used for jersey knitting.

The Orlon content of most yarns is 50% 3-den. relaxed fibers and 50% 4.5-den. stretched fibers. Other blends are made to suit customers' requirements. The wool content is exceptionally clean.

The Orlon is received in tow form and is stretched, broken, and drafted on the Turbo stapler to change the tow to sliver. A system operated so that tow from a minimum of six different cases is blended at the first gilling operation after the stapler to obtain good evenness and dyeability.

The 3-den. fibers are then processed in a fiber setter. Particular attention is paid to this operation where the temperature of each fiber-setting cycle is double checked. Sliver processed at any temperature other than 240° F. is not used.

How Shrinkage Is Tested

A shrinkage test is made on a 36-in. length of sliver before and after processing on the fiber setter. The test piece must relax 9 to 9½ ins. A staple diagram is also made before and after relaxing.

The relaxed sliver is then processed on a reducing machine developed in the mill to insure even blending. This sliver is then blended with the stretched Orlon and the wool top on a blending gill constructed to the mill's specifications.

A high number of doublings are obtained, and the number of doublings are selected to obtain the correct blends.

The 3-den. Orlon enters the gill as 210-grains-per-yard sliver, the 4.5-den. Orlon is 180-grains-per-yard sliver, and the wool top is about 250 grains per yard. The three fibers are blended to produce a 600-grains-per-yard sliver.

Four pin-drafter operations are used to obtain evenness and blending. Two slivers from the blending gills are creeled at the first pin drafter and processed with a draft

of about 8.5 to obtain a 146-grains-per-yard sliver.

Six ends of this sliver are processed with a 7.9 draft to obtain a 110-grains-per-yard sliver. In the third operation, four slivers are reduced with a draft of 7.3 to form a 60-grains-per-yard sliver. In the final operation, six ends are processed on a quad-delivery pin drafter with a draft of eight to produce a 45-grains-per-yard sliver.

This sliver processed on a roving frame with a draft of about seven produces a 1.25-hk. roving. Yarn numbers spun from this roving range from 20s to 34s with drafts from 7 to 18.

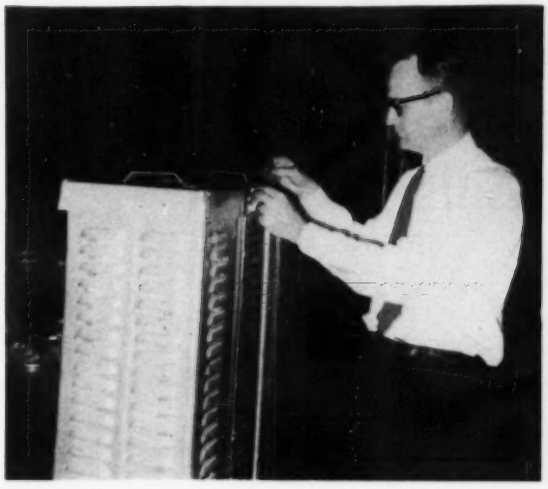
Shrinkage tests are made daily on these yarns. To check quality, yarn is wound on a large inspecting drum.

Dye Affinity Is Checked

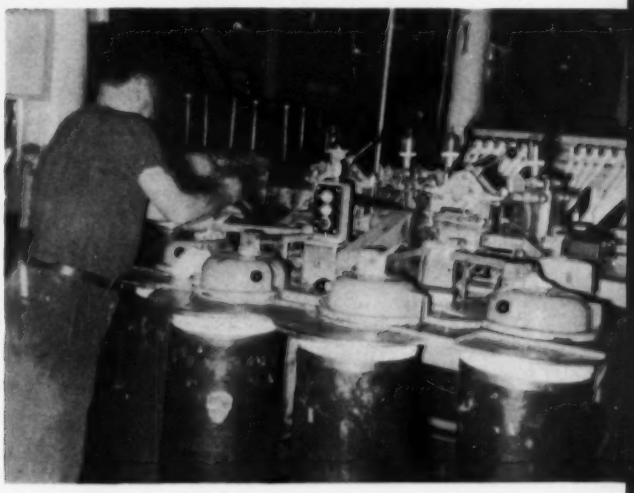
Correct dye affinity of Orlon and Orlon blends is checked by knitting a 12-in. piece of fabric each week and dyeing it. This test is made to insure that the same lot has the same dye affinity over the period of several weeks of processing.

Yarn is also knitted into samples to check on evenness and confirm results from evenness testers. Wax extraction tests are made daily to make sure that yarns are easy to knit.

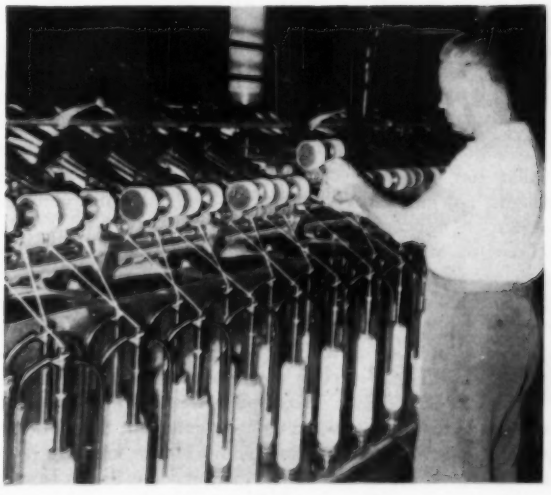
By keeping a close check on the lubrication of the yarn and testing for evenness and dye affinity, American Thread makes sure that these Orlon-wool yarns can be processed with no difficulties.



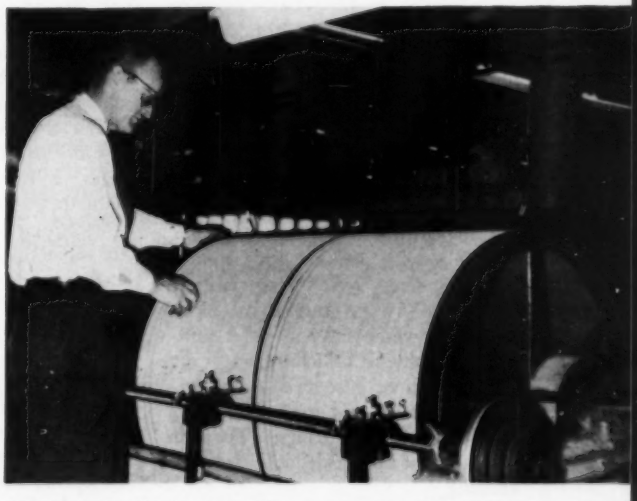
SLIVER made from 3-den. Orlon is treated in these cans at 240° F. to relax the fibers.



PIN DRAFTING insures yarn evenness and thorough blending of the wool with the Orlon fibers.



ROVING is made from 45-grains-per-yard sliver. One end of sliver is put up to produce 1.25-hk. roving.



ORLON-WOOL YARN is wound on a drum to check evenness. Supervisors meet weekly here to discuss yarn quality.

KOMET MACHINES run 2/70-den. stretch yarn from welt to toe. Ten-color knot tyers provide more colors for stripes than the hand-transfer machines, and one operator looks after 10 machines.

INSPECTING MACHINES are along the wall, and tables with socks to be inspected are close to the machines. One machine produces about 300 doz. pairs of socks per day.

New Machines Improve Socks At Lawler Hosiery Mills

• New double-cylinder knitting machines and new automatic hosiery-inspecting machines have helped this Georgia mill more than double production. Better products are being turned out, and inspection production has increased 25%.

TO INCREASE PROFITS from children's hosiery, Lawler Hosiery Mills, Carrollton, Ga., has installed new equipment that cuts production costs and makes better socks. The equipment is double-cylinder knitting machines and automatic hosiery-inspecting machines.

Most of Lawler's socks were knitted on hand-transfer machines until the new machines were installed. One girl formerly operated three or four hand-transfer machines, but now one girl operates 10 of the new machines.

The plain Komet machines are 3-in. machines with 140 or 156 needles, and sock sizes 6 to 8½ are knitted. Sizes 3 to 6½ are knitted on 2¾-in. machines, which have 10-color automatic knot-tying attachments.

All machines have two-feed attachments, but striped tops are made with single-feed knitting. The plain leg and foot are made with two-feed knitting.

Picot tops are made on the top cylinder of the plain machines so that the picot is visible when the tops are turned down.

When stretch socks were knitted on the hand-transfer machines, spun-nylon yarns had to be striped in because of the difficulty in hand transferring stretch socks. Stretch socks are now made on the Komet machines, and 2/70-den. stretch yarn is run from welt to toe on all machines.

After the socks have been looped, they are inspected on automatic machines, a change that has boosted production 25% over the old method of stretching the socks on a board. The inspecting machines are arranged in a straight line down one side of the room, and the inspectors all sit facing the same direction.

A low table is positioned at a 45° angle close to the forms on the inspecting machine. A bundle of socks is placed on the table, and the string holding the socks together is loosened. The operator reaches for a sock, draws it over the form, and inspects it on all sides as the form is turned.

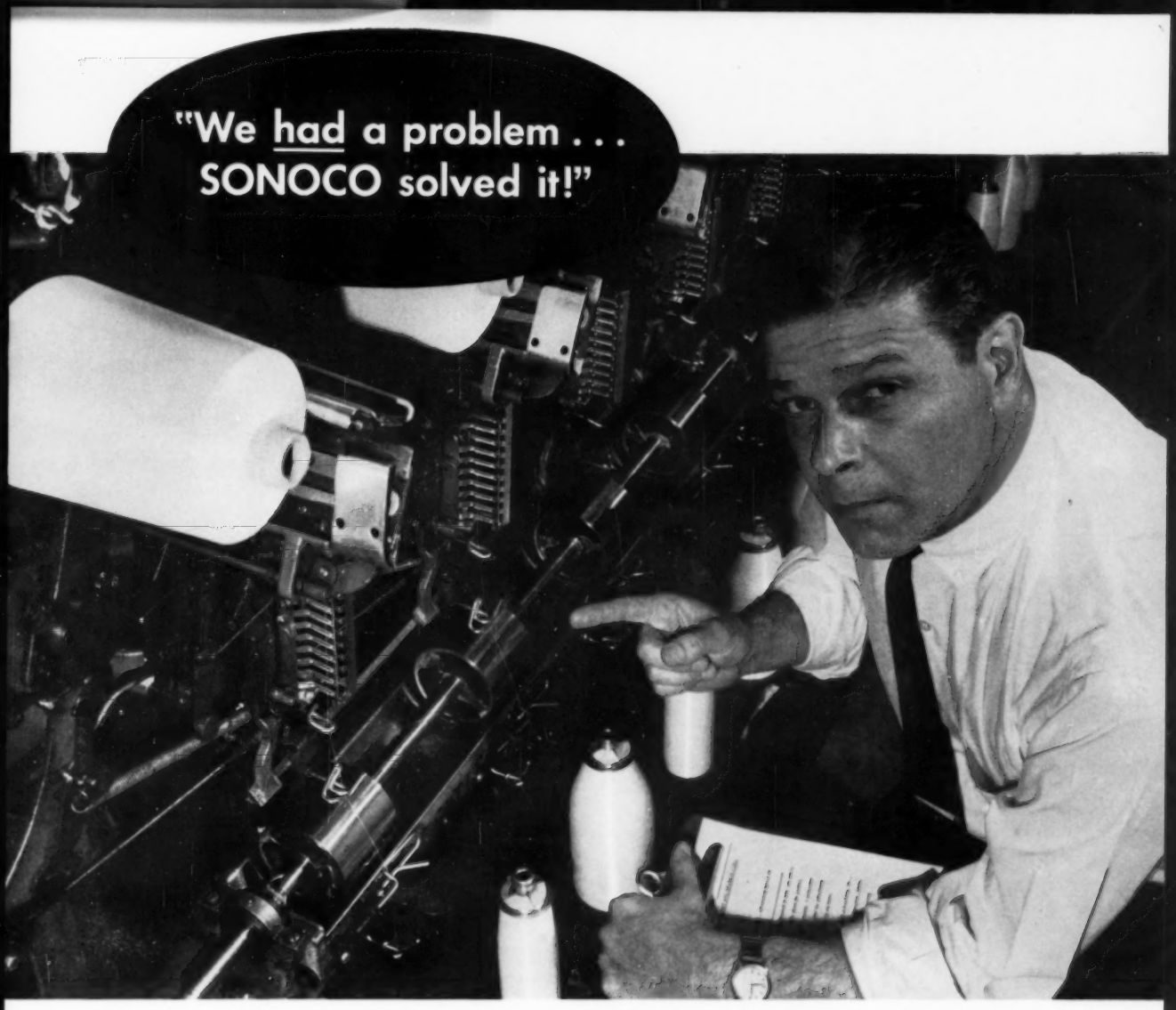
If the sock is perfect, it is automatically drawn through the hollow form and deposited in a bag at the side of the operator. A counter records the number of socks placed in the bag.

Operator Picks the Best Form

The capstan on the inspecting machine is equipped with four forms of different sizes. These sizes cover the whole range of socks produced by Lawler. When a different size has to be inspected, the capstan is turned so that the most suitable form is nearest the operator.

In addition to inspecting socks for holes and other faults, the colors in the stripes and the pattern are checked. Each inspector is supplied with a book that shows the correct color combination for each style.

To improve operator efficiency, nine water-cooled ducts have been installed on the ceiling of the knitting room. Air from the outside is drawn through a water screen to change the air in the knitting room every 60 secs.



THE NEED: Cones to resist oil absorption

Yarn lying next to the cone surface was found to be brittle and stiff and hard to work. This condition was caused by the cone absorbing oil from the yarn. The solution to the problem required cones with a suitable oil barrier surface.

Through research and experimentation Sonoco found that cones with special Unitex surfaces eliminated the oil absorption. An oil extraction, from yarn aged on cones of this type, showed no deficiency of oil in the yarn lying next to the cone surface — and at 1000 yards per minute, the yarn showed no tendency to slough off.

Only Sonoco with 60 years' experience, plus modern research and completely integrated manufacturing facilities, could solve this problem quickly with economical and efficient carriers. It is typical of countless cases where Sonoco technical and production "know-how" has benefited the industry. You can continue to depend on Sonoco!

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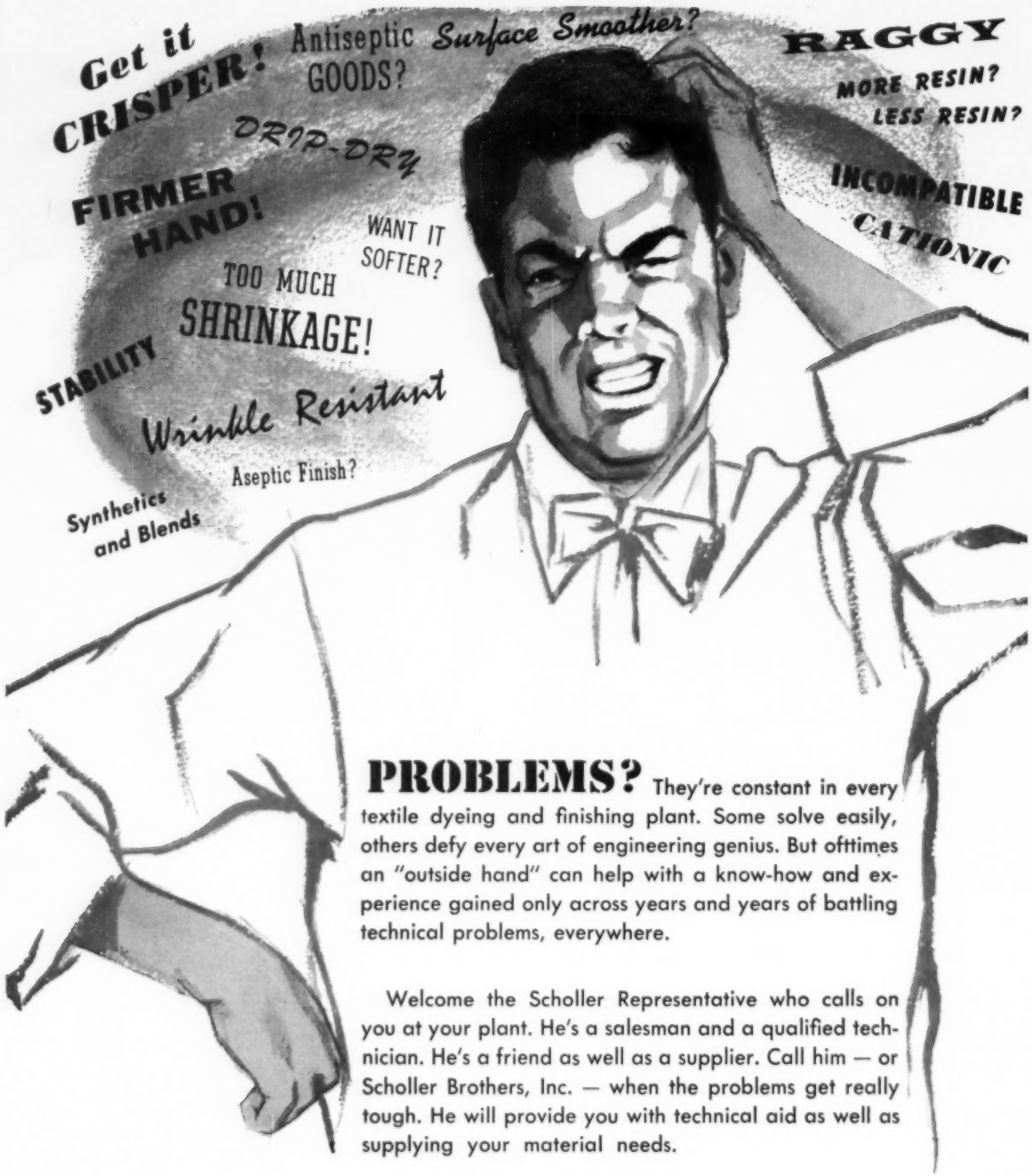

PROBLEMS? They're constant in every textile dyeing and finishing plant. Some solve easily, others defy every art of engineering genius. But ofttimes an "outside hand" can help with a know-how and experience gained only across years and years of battling technical problems, everywhere.

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Textile World

CHEMICAL TREATMENT AND FINISHING

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To get faster fabrics in jet planes... F. Schumacher saw SANDOZ

After F. Schumacher & Co. had obtained an upholstery contract for the new Boeing 707 jet air-liners, the fastness specifications* were raised to a point far beyond what anyone had ever asked of direct-dyed fabrics.

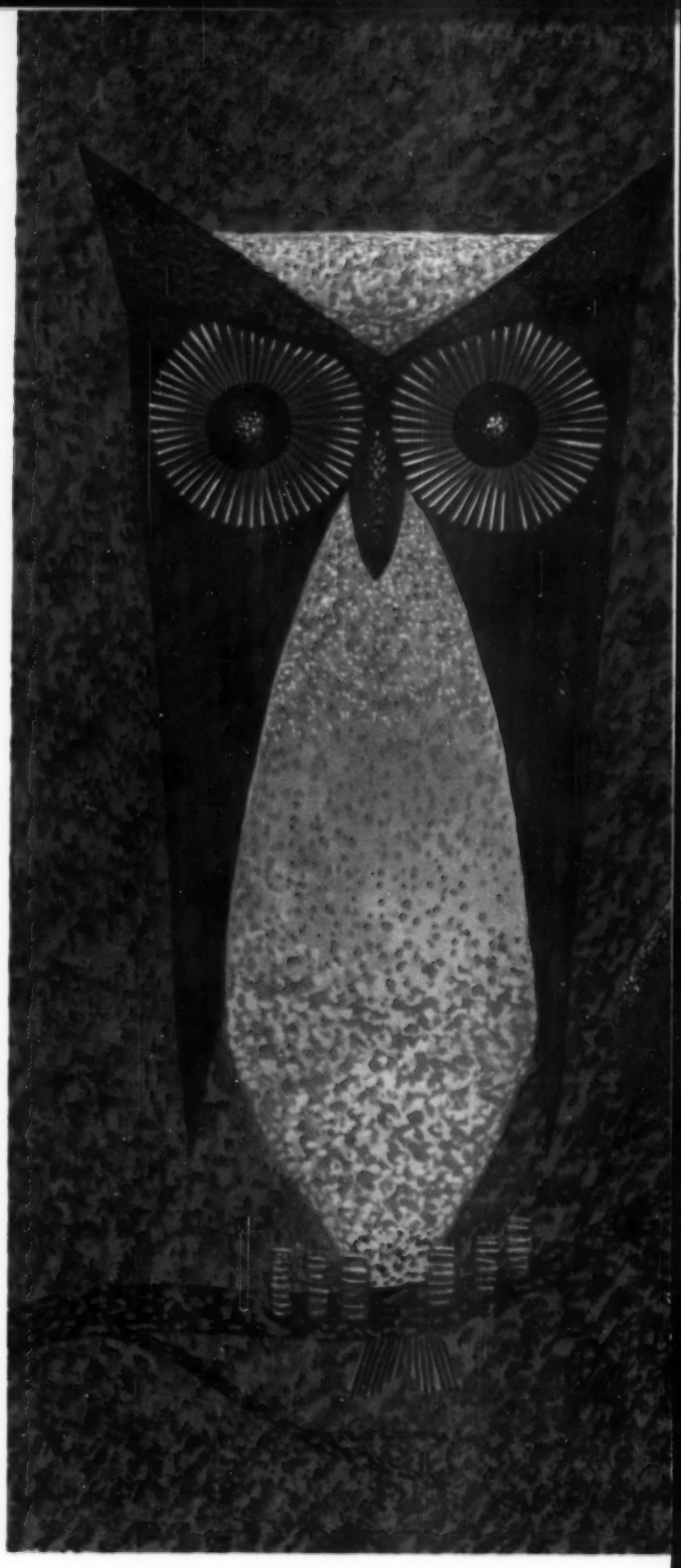
When final requirements were submitted to SANDOZ color technicians, new shade formulas —based on Lumicrease dyes—were developed. SANDOZ helped Schumacher meet the seemingly impossible specifications!

These SANDOZ Lumicrease formulas, in dyehouse production under Schumacher supervision, resulted in tested and approved upholstery fabrics. One of the first to use them is Continental Air Lines, whose design firm, Charles Butler Associates of New York and London, selected Schumacher Gold, Coral, and Turquoise shades for seat upholstery in Continental's Golden Jet Service. If you ride the Continental jets between Chicago and Los Angeles, you'll see the fastest direct colors anywhere in the world.

Now, how can SANDOZ color technicians help you?

*—140 hour fastness to light without appreciable fading; fastness to crocking, to dry cleaning, and to perspiration.

District Offices: Charlotte, Cincinnati, Fair Lawn, N.J., Hudson, Mass., Los Angeles, Philadelphia.



Continental's Golden Jet Service also includes Denver and Kansas City.

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

Solvents Help Polyolefin Dyeing—

Dyemakers faced with the dyeing problems created by the hydrophobic polyolefin fibers are turning to organic solvents as one way out.

Experiments to date show that basic or disperse colors can be coaxed onto polyolefins if the dyebath consists of xylene or an aqueous emulsion of such a hydrocarbon. Solvents that carry methyl or halogen radicals are also useful, as are hydrogenated variations.

One procedure based on solvents prescribes treatment of the fiber for 1 hr. at 50 to 60° C. in a 5% aqueous emulsion of xylene. The emulsion is formed with the aid of a fatty-acid polyethylene glycol condensation product or an ethylene oxide addition product of an alkylphenol. The presence of water seems to aid absorption of the dye.

Resin Improves Rot Resistance of Cotton—

The latest method for protecting cotton from rotting was recently announced by the U. S. Dept. of Agriculture. The process is based on impregnating cotton fabrics with a solution of the acid colloid of methylolmelamine.

The resin penetrates the outer portion of the fiber cell wall and makes the cotton virtually immune to rot and mildew.

Soil-burial tests showed that cotton fabrics that had been treated with the resin retained 100% of their strength after 21 weeks of exposure to soil bacteria.

New Black for Printers—

A printing black that can be steamed under alkaline, acid, or neutral conditions has been patented by Farbwerke Hoechst A.G., in Germany.

To produce the color, goods are printed with a paste that contains trihydroxybenzene and an antidiazo or a hydrazine-sulfonic acid of a 4-aminodiphenylamine carrying group not capable of producing water solubility. Also included in the paste are ammonium thiocyanate and sodium chromate or chlorate.

The color is steamed for 10 mins. at 100° C. after printing. The wide pH range permissible allows the simultaneous printing of colors that might be sensitive to certain pH conditions.

Two-Stage Softening Saves Money—

Savings in steam and softening materials should result from a finishing treatment recently announced in Germany.

Loose fiber or fabric that might normally be treated with a 5 to 10% solution of softener is soaked or padded in a solution carrying only 0.01% of softener. Then the material is hydroextracted or mangled; and as it passes on to the dryer, a 20% solution of softener is applied by spraying or by contact with a roller that revolves in the finishing solution.

The fiber or fabric is made receptive to the softener by its previous treatment; and because it is still damp, it picks up relatively little of the stronger solution of the softener and does not require mangling.

Irradiate Wool for Two-Tone Effects—

By exposing patterned areas of wool fabrics to ultraviolet radiation, desirable two-tone effects are created when the goods are dyed.

Fabric is exposed for 4 mins. to light in the 3,000- to 4,000-A-unit range under cut-out metal or cardboard patterns in a method recently patented in Great Britain. The quartz lamps are placed about 6 ins. above the goods.

Subsequent dyeing with level-dyeing acid colors, neutral-dyeing wool dyes, premetallized dyes, or chrome mordant dyes will give the two-tone effects.

The irradiated areas dye deeper than the shielded portion, and the effect is best created with dyes that show contrast effects between chlorinated and normal wool.

Irradiation is accentuated if the goods are first treated with an oxidizing agent such as hydrogen peroxide, and the tone-on-tone effect is increased if the dyebath is first charged with a dye retardant such as naphthalene or phenolic sulfuric acid.

Epoxy Resin Bonds Vinyl to Fabric—

The difficulty of getting a good bond between polyvinyl chloride and almost any textile-fiber surface has been overcome, according to British Patent 809,290, by first treating the goods with an epoxy resin.

A suitable resin can be made by condensing resorcinol with epichlorhydrin to yield a polymerized glyceryl polyether. Diethylene triamine is added to the fabric-treating solution to accelerate hardening.

The goods are impregnated in a dispersion of the epoxy resin, the hardener, and some polyvinyl chloride in a mixture of acetone and methylcyclohexanone. Then they are dried to drive off the solvents, further heated to 80 to 100° C., and cured for 3 to 5 mins. at 180 to 200° C. according to the type of fiber.

When polyvinyl chloride is applied to goods that have been pretreated in this way, a very strong bond between PVC and fabric is obtained.

Dye Wool From Cold Baths—

Wool can be dyed in 1 to 2 mins. from cold formic-acid baths with certain acid, acid-milling, and neutral-dyeing chrome colors, according to a report from Wool Research Laboratories, Parkville, Melbourne, Victoria, Australia.

The process appears to be most valuable in dyeing loose wool or top because the formic acid tends to swell the fiber; so tightly twisted yarns resist pentration of the dye. Woolen fabrics can be printed with formic-acid solutions of dye thickened with modified cellulose thickeners, and the fiber need not be chlorinated to get good results.

Commercial formic acid of 85 to 90% strength is suitable as the dye solvent; but the less water present in the dyebath, the better the results.

Advantages of the process include the possibility of continuous dyeing, less damage to the fiber, and no steam requirements. The recovery of the formic acid is necessary from an economic standpoint, but preliminary work indicates that recovery is relatively easy.

Ultrasonic Waves Speed Dyeing—

Reports from Russia indicate that experimenters there have been successful in cutting down dyeing time for cellulosic materials by subjecting the fibers to ultrasonic waves generated in the dyeing vessel.

According to the Bulletin of Technical-Economic Information, U.S.S.R., ultrasonic waves at a frequency of 21.3 kHz. are used on dyeing vats that carrying about 175 lbs. of cotton. Dyeing proceeds at 60° C. and requires 40 to 45% of the time needed for usual methods. Higher temperatures would affect the nickel vibrators.

All classes of dyes that are suitable for cellulosic fibers respond well to the ultrasonic method. Vat dyes, with which the Russians claim to have had trouble because of hard water, can be applied with the aid of ultrasonic waves with very few rejects.

Pleating Process May Cause Color Change—

Some classes of wool dyes can be expected to change color if goods with which they are dyed are further subjected to treatment with ammonium thioglycollate.

This chemical is used to produce permanent pleats in woolen fabrics, and it is essentially a reducing agent that is also capable of reacting with metals.

The color changes are most evident on dyes that are easily reduced. Some chrome dyes are unaffected, and only a few are very sensitive to ammonium thioglycollate. However, some dyes in all classes are susceptible to serious change. Certain premetallized dyes undergo a shade change that can be almost completely reversed by an aftertreatment with peroxide.

Built-In Catalyst Aids Resin Finishing—

Cotton that has been padded in monochloracetic acid and then treated with strong caustic (partial carboxymethylation) is not only 35% stronger than untreated cotton, but the modified fiber acts as a self-catalyst in subsequent resin finishing.

In a recent report to the Textile Conference held in Gothenburg, Sweden, Dr. C. M. Conrad pointed out that carboxymethylation to about 0.3% weight increase gave the optimum qualities of strength increase, catalyzing action, and improved wearing qualities. Other chemical modifications such as are produced with acrylonitrile, acetic anhydride, benzyl chloride, and others tend to decrease the wearing qualities of cotton.

Amine Provides Fire Resistance—

Cellulosic materials can be made flame resistant by a treatment described in recent Russian reports. The material is first soaked for 24 to 30 hrs. in a 1.5 to 2% solution of sodium alginate. The excess liquor is removed, and the goods are then treated in a 15% solution of ethylene diamine and hydrochloric acid for two to four days. The material is then thoroughly washed in water and dried.

The most favorable ratio of amine to acid is 1 to 1. The reaction may also be catalyzed with up to 5% on the weight of the amine with phosphoric or perchloric acid.

The effectiveness of the process is claimed to be three to five times that of treating the goods in a 20% solution of ammonium sulfate.

Did You Know . . .

. . . that acrylic fibers with good vat-dyeing properties have recently become available? Although it has been known for some time that easy-dyeing acrylic fibers can be spun from polymers obtained by copolymerizing a mixture of acrylonitrile, a vinylpyridine, and allyl alcohol or a substituted derivative of the latter, commercial production of such a fiber ran into difficulties.

In a method patented in England by the Italian firm of Montecatini, acrylonitrile is first polymerized and then mixed with a 50-50 copolymer of vinylpyridine and allyl alcohol to form the final copolymer. The mixtures are gauged to produce a fiber with 88 to 96% acrylonitrile, 2 to 7% vinylpyridine, and 2 to 5% allyl alcohol. Tensile strength is 4.5 to 5 grams per denier, with an elongation of 15 to 16%. The fibers are also very receptive to acid and disperse colors.

●

. . . that di-isocyanates applied to wool will improve the fiber's resistance to chlorine? Researchers are finding new textile applications almost daily for isocyanates and their reaction products with polyethers or polyesters. In the works at one laboratory are a durable water repellent based on a urethane foam and a wash-and-wear finish of the same general type that doesn't discolor the fabric.

●

. . . that you can produce nascent peracetic acid by acidifying dilute peroxide solutions with acetic anhydride in the presence of a catalyst? A bleaching solution of this type is said to be particularly well adapted to bleaching goods that contain vat- or azoic-dyed areas. Solution stability is good.

●

. . . that different methods of preparing cotton fabrics affect their ultimate chlorine-retention properties after they have been resin finished? Preliminary studies indicate that the more thorough the bottoming, the less tendency there is for the goods to retain chlorine.

NEW DYES AND CHEMICALS

Discharge-Printing Compound

Eccoblanc W-40 . . . is a resinous white-discharge printing compound that carries its own binder. The product is noncuring and nonyellowing and has good resistance to washing and drycleaning. Covering power is rated as excellent.

The thickening agents and the viscosity of the compound are such that they will not thin the viscosity of the print paste to which they are added. Permanently white prints are assured by the presence of optical bleaches and a sulfoxylate-resistant bluing material. Eastern Color & Chemical Co., 35 Livingston St., Providence 4, R. I.

Circle D-1 on Reader-Service Card

Antibacterial Finish

Eversan . . . inhibits the growth of a broad spectrum of bacteria, including odor-causing germs, when it is applied to fabrics.

The product is claimed to be effective for the life of the garment and will withstand high-temperature laundering with harsh detergents and chlorine.

Based on a zinc complex, the bacteriostat has proved to be 99.9% effective against staphylococcus aureus. Yardney Chemix Corp., 40-50 Leonard St., New York, N. Y.

Circle D-2 on Reader-Service Card

Nonchlorine-Retentive Resin

Resloom E-63 . . . is a precatalyzed heterocyclic nitrogenous resin that resists discoloration from scorching and is nonchlorine retentive.

Supplied as a low-viscosity water-white liquid, the product provides cotton fabrics with good dimensional stability and excellent wrinkle recovery.

The resin is particularly recommended for white cotton fabrics because it does not turn yellow with chlorine and does not cause soil redeposition in laundering or give off amine odors. Monsanto Chemical Co., Springfield, Mass.

Circle D-3 on Reader-Service Card

Silicone Bonding Aid

Z-6020 . . . is an amino-silane that reacts with both organic and inorganic materials to unite them in a strong, durable bond.

Applications include addition of the silane to glass-fiber insulation to improve resiliency and resistance to moisture and to epoxy resins that are used in resin-glass laminates.

Glass fabrics that have been pretreated with a dilute solution of the material can be dyed with wool dyes.

In water solutions, hydroxyl groups form on the silicon atom; and these will attach themselves to inorganic materials such as glass, metal, or minerals. This bridging effect is the base for most applications of the product. Dow Corning Corp., Midland, Mich.

Circle D-4 on Reader-Service Card

Cationic Softener

Richsoft 1925 . . . produces a soft, lofty hand on cotton and man-made-fiber fabrics. The product is applied at a rate of 2 to 4% owg. from cool solutions and will not go rancid in storage or darken at temperatures up to 300° F. Richmond Oil, Soap & Chemical Co., Inc., 1041 Frankford Ave., Philadelphia 25, Pa.

Circle D-5 on Reader-Service Card

Water Repellent

Eccopel . . . supplied in a two-component package that includes Eccopel A and Eccopel B, imparts semidurable water repellency to any fabric. No catalyst is required, and no curing is needed to get adequate water repellency. The product does not foam during high-speed application. Eastern Color & Chemical Co., 35 Livingston St., Providence 4, R. I.

Circle D-6 on Reader-Service Card

Yarn Lubricant

Stat-O-Lene . . . provides excellent lubricity for nylon yarns of 10-, 12-, or 15-den. monofilament, or multifilament types that are used for the production of women's seamless hosiery on 400- to 474-needle knitting machines. The oil has antistatic properties, which aid in reducing latch closing caused by static developed by friction in needle slots. H. C. Harding, Inc., Second & Tilghman Sts., Philadelphia 22, Pa.

Circle D-7 on Reader-Service Card

Washing-Softening Compound

Scoursoft 1900 . . . is particularly designed to be used in washing and softening knitted outerwear fabrics made of wool or blends of wool with other fibers.

The product is added to the bath at a rate of 3 to 4% owg. Bath temperatures are kept at 100 to 110° F., and the goods are worked for 5 to 18 mins. according to weight and the fiber content. Richmond Oil, Soap & Chemical Co., Inc., 1041 Frankford Ave., Philadelphia 25, Pa.

Circle D-8 on Reader-Service Card

Aliphatic Ketone

Stearone . . . described as a high-molecular-weight aliphatic ketone derived from stearic acid is suggested, as a base for softeners or water-repellent compounds.

The product is insoluble in water and is unaffected by acids, alkalis, and other strong chemicals. It is highly inert and subject to only a few reactions under vigorous conditions. Argus Chemical Corp., 633 Court St., Brooklyn 31, N. Y.

Circle D-9 on Reader-Service Card

President Albert F. W. Jaeger . . .

"Our search for good water has paid off businesswise. You don't get whites like this unless water conditions are nearly perfect."

"The future looks good. In March, April, and May we had our best three months to date."

Out on the floor, Jaeger and his dyer, C. P. Richkus, check winding on a lot to be processed.

Carolina Yarn Processors Hits Its Stride

In less than a year and a half of actual production, this Tryon, N. C., plant has become well established in the yarn-bleaching and -dyeing business. Important factors in its success are—

- **Active, resident top management**
- **A compact, low-overhead organization**
- **Excellent natural facilities**

"I FEEL that I'm building something here," says Albert F. W. Jaeger, president and treasurer of Carolina Yarn Processors, Inc.

The spirit behind the remark probably has as much to do with the success of the business as all the experience and careful planning that have gone into it.

After 25 years in the yarn-dyeing business in New England, Albert Jaeger decided it was time to go in for himself. The plant at Tyron was picked after careful examination of water facilities and other factors in four states. Considerable work was necessary to put the plant itself in shape to accommodate the package-dyeing machines and to rebuild the water-filtering system.

After about six months of renovating and machine installation, the plant made its first yarn shipment on Dec. 13, 1957. From that time on growth has been steady. Present production averages 30- to 35,000 lbs. per week of bleached and dyed yarn.

Management Knows the Score

President Jaeger, with a wealth of dyeing experience behind him, is able to help his boss dyer when unusual problems arise and is on hand to do just that when it is necessary.

The plant handles yarn both for its own account and for others. Present ratio is about 50-50; so Sales Manager Jaeger solicits business for both types of accounts.

With the help of one full-time office employee and a part-time assistant, Treasurer Jaeger keeps his fingers on the financial pulse of his operation.

Water Supply Is Vital

"I spent nearly six years looking for just the right water for package dyeing," says Jaeger. "We have an unusually good supply here from the Hogback Mountain water shed. The total hardness averages 10 ppm. and only 4 ppm. as carbonates, which is nearly perfect for our purposes."

Water-processing costs are extremely low, about $40 per month for coagulants that help the filter system remove the natural silt.

Clean soft water is particularly necessary for package dyeing because each package is essentially a filter in itself and will trap any precipitates that might form with processing materials.

CONTINUED ON PAGE 71

MORE "PERFECTS" AT THE END OF THE DAY!

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d-2 LESTOIL removes grease, oil, graphite, natural waxes and gums, soluble sizing, mill dirt . . . all the soils that cause "seconds". You need no new equipment or process changes and LESTOIL can be used with confidence on wool, silk and synthetic fabrics.

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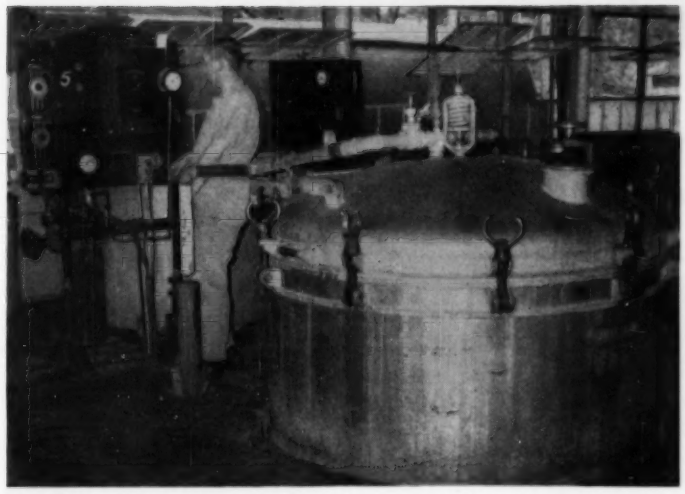


AUTOMATIC TEMPERATURE CONTROL AND CYCLING are being checked here by Albert Sawyer on one of the plant's 600-lb. machines.

Hot Water Saves Time and Money

At the start-up, condensate from the heat exchangers on the seven dyeing machines was not utilized; but as soon as possible this source of hot water was piped into the boiler-feed system. An auxiliary line was also run to the hot-water storage tank. But although these changes cut the coal consumption from four to three cars per month, there was still a considerable time lag in the heating of process water in the dyeing machines themselves.

The next move was to install an instantaneous hot-water heating system that would keep 4,200 gals. of 180° water on tap at all times. Draw on this supply is seldom more than 800 gals. at any one time, and the heater will make up this amount in a few minutes.

The advantages of plenty of hot water are twofold: a 1,000-lb. dyeing machine can be brought to scouring or bleaching temperature as fast as the liquor can be pumped in, and the return condensate for boiler feed is at top temperature during the entire cycle.

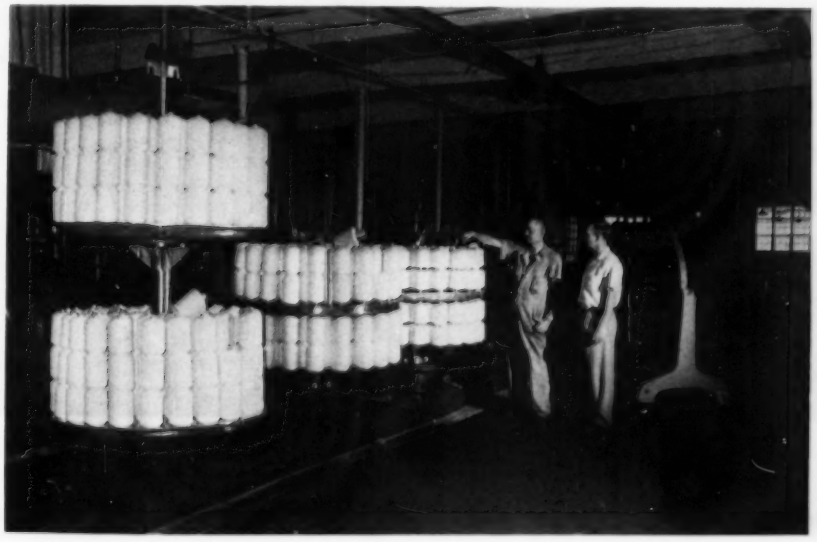
Heat-up time for a large machine starting with cold water used to run 35 to 40 mins. Multiply this figure by the seven machines now in operation and figure an average of six loads per machine per 24-hr. day, and you get some idea of the importance of this saving in time.

Costs Tailored to Prices

"We can't expect to get more money for our work in this market," says Jaeger, "so we work incessantly at keeping our costs down to a minimum. We try any new idea that is presented to us if it seems at all practical.

"As an example, we're able to do the actual peroxide-bleaching step in 50 mins. with the help of materials suggested by a supplier. Wetting out and rinsing aren't included in that figure, but it wasn't too long ago that we need 2½ to 3 hrs. for the bleaching alone."

Another contributing factor to low costs is cooperative labor that is willing to stay busy during working hours. The plant at present employs 44 people at wage rates over minimum requirements.



PORT DRYERS are used to remove the balance of the moisture from the dyed yarn after it has been extracted in a pressure extractor.

Geigy Dyestuffs Division of Geigy Chemical Corporation
Saw Mill River Road, Ardsley, New York

Branches: Charlotte, Chattanooga, Chicago, Los Angeles, Newton Upper Falls, Philadelphia, Portland, Toronto

Tips on Printing With Metallic Powders

• Because they are very different from conventional dyes and pigments, metallic powders require some modifications in color-printing processes if good results are to be expected. Here's what has to be done to get a first-class job.

By MALCOLM MACKAY

BRIGHT, SHARP PATTERNS can be printed with metallic powders if you modify usual procedure to suit the peculiarities of these materials. Cloth preparation is generally the same as for any other style of printing, but some plants calender the fabric before printing in order to present a flatter surface that will retard penetration of the metallic particles.

On flannels, it has been found beneficial to use a schreiner calender to flatten the nap. This operation retards absorption of the binder before it can be cured and contributes to well-fixed surface effects.

Binder Selection Is Critical

Binders for metallic powders are all based on resins that are cured to fix the metallic component on the fabric.

Binders include home-made mixtures of ethyl cellulose as a carrier, a melamine resin to improve wash-fastness, and an acrylic resin. These binders are used with varying degrees of success according to the skill of the plant chemist.

It is safer to use a proprietary non-solvent binder that has been designed for the purpose. The ideal binder dries fairly quickly but not so fast as to cause the metallic mix to dry on the print roller and clog up the engraving.

Water-in-oil binders are generally satisfactory; but if oil-in-water pigments are printed ahead of them, there is some danger that the water-in-oil emulsion will be broken by contamination from the oil-in-water mixes.

Also, water-in-oil binders will not fix the metallic powder in areas where they fall on oil-in-water pigment prints. Oil-in-water binders for metallic powders are very good, but they do not have the printing qualities of nonsolvent types. They are more difficult to lubricate and tend to streak and stick to the print roller.

Lacquer-type binders present a fire hazard in roller printing but are satisfactory for screen printers.

Get the Right Particle Size

The most satisfactory mesh sizes of the metallic powders will pass through screens of 285 to 325 meshes per inch. Smaller particles do not bind well, and larger ones have inferior light-reflecting qualities. The metallic powder should be supplied with a nontarnishing coating by the manufacturer.

The metallic powder should be mixed with the printing medium with a hand paddle. Power-driven mixers tend to occlude air in the mix, which impairs printing. If the binder needs thinning, the manufacturer's directions should be followed closely. Excess solvent or water may affect the binding quality of the mix.

Oil-in-water binders may be lubricated by the addition of small amounts of a synthetic detergent such as Igepal or Triton X-100. Water-in-oil binders usually require no added lubricant.

Make Small Mixes

It is good practice to mix only enough metallic-print formulas to last 2 to 3 hrs. If any mix is left overnight, work it into fresh material on a basis of 1 part old mix to 10 parts of fresh material.

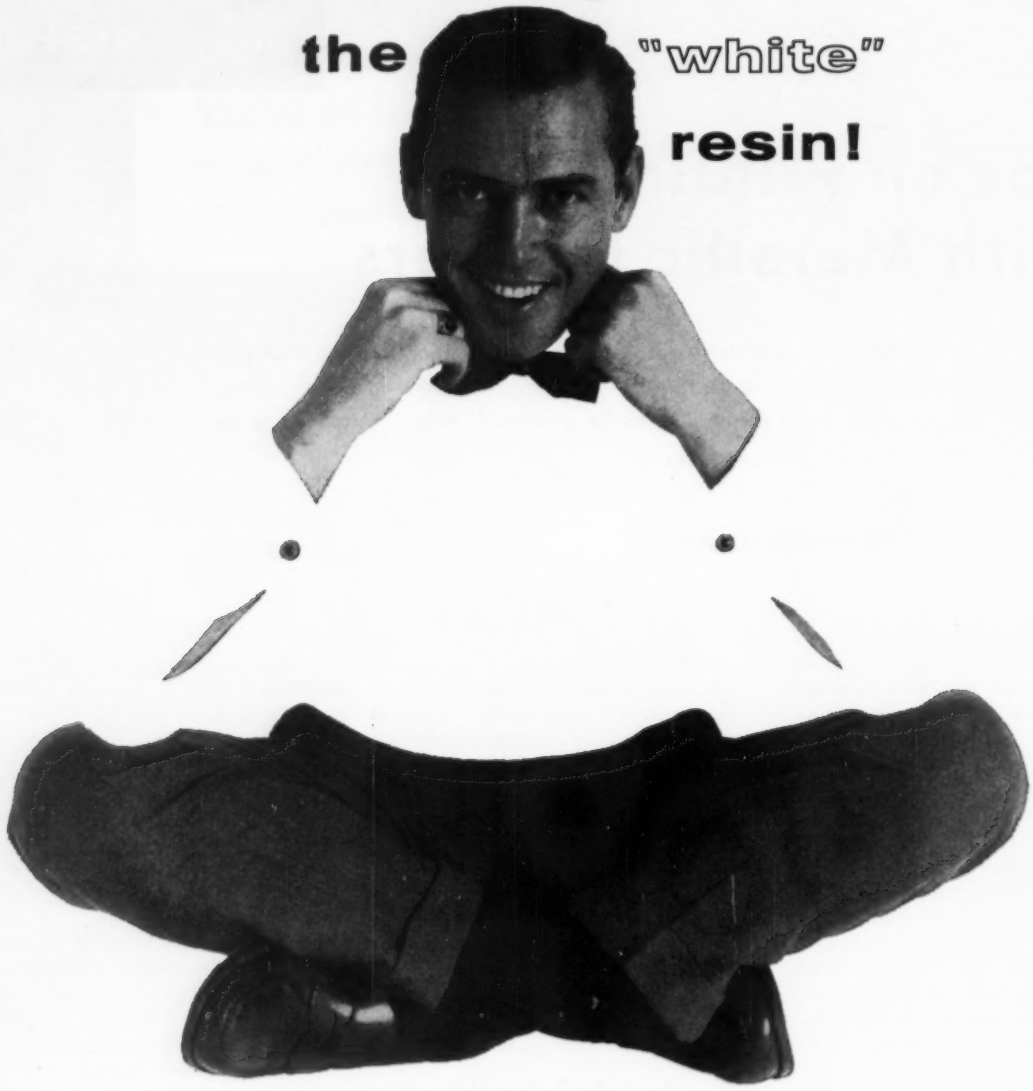
The print rollers that will be used to print metallic designs should have coarse grounds that have been etched down to the point where they resemble the teeth of a file in the bottom of the engraving. Too-fine grounds tend to clog with metallic particles. Unbroken lines around the roller that are too fine to be grounded should be avoided because foreign matter that may be trapped under the doctor blade will strip color out of the engraving and the line will not print.

Straight copper rollers give better coverage than chromium-plated rollers, and the metallic powders do not scratch the copper. The copper surface appears to give better adhesion of color than the very slick chromium plating.

Because of the deep engraving and shallow grounds, rollers that have been prepared for metallic printing are seldom suitable for other types of printing media.

CONTINUED ON PAGE 75

Announcing the "white" resin!



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A NEW FINISHING RESIN FOR WHITE WASH & WEAR COTTONS — SHEDS CHLORINE, REDUCES SCORCH DISCOLORATION, KEEPS WHITES "WHITE" AND ODOR-FREE!

Here is the W&W finish that resists chlorine in laundering! White cottons treated with Resloom E-63 come out really white—never "soil-grey"—and they smell fresh, odor free! There's little, if any, discoloration due to scorching, and the cottons are crush-resistant and dimensionally stable. Resloom E-63 can be accurately controlled to create a wide variety of hand. **Write today for complete processing data** to Monsanto Chemical Company, Plastics Division, Room1212,Springfield 2, Massachusetts.

*RESLOOM, STYMER, LYTRON: REG. U. S. PAT. OFF.

Monsanto

Other Monsanto textile chemicals include Resloom E-50 cyclic urea resins; Resloom HP and M-75 melamine resins; AC Catalysts; Stymer* Sizes; and Lytron* Polystyrene Latices.

Light Set Is Important

The roller that is used to print a metallic pattern should be set with very light pressure against the fabric. Heavy pressure will drive the binder into the fabric and leave the metallic component on the surface with insufficient binder to hold it.

The light set on the metallic-printing roller may cause registration difficulties between the metallic print and other components of the pattern because the latter are normally set at considerably higher pressure.

To prevent other colors in the pattern from contaminating the metallic print, many printers use a gum roller ahead of the metallic-print roller and also put a lint doctor on the metallic-printing roller.

Metallic prints that fall on alkaline colors may be tarnished by the alkali, and this situation should be avoided if possible.

Metallic prints that fall on colors made alkaline with ammonia are almost sure to tarnish.

How To Dry and Soap

Metallic prints should be dried in such a way as to avoid contact of the face of the goods with hot metal until the goods are nearly dry. You can get this effect with flue dryers or infrared units or at least in part by wrapping the first few cans in a stack with back gray.

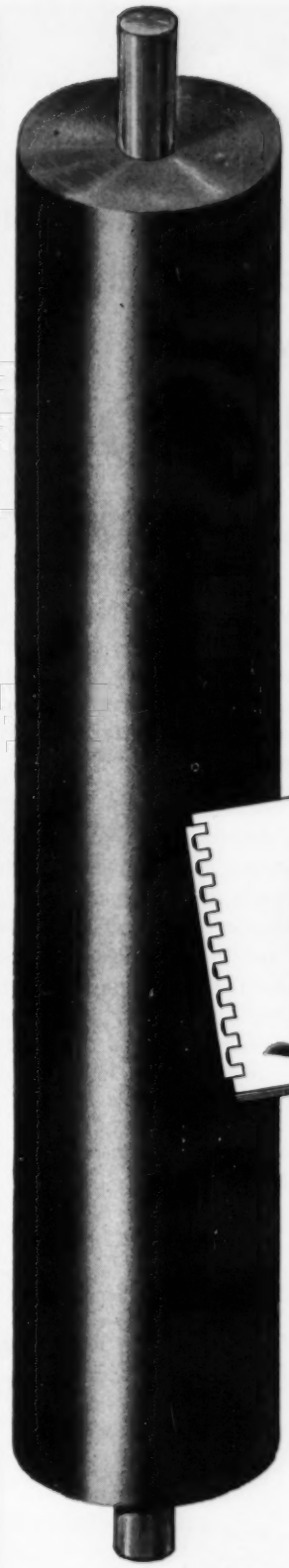
Cloth wrappings should be watched; and as they become contaminated, the outer layer should be cut off.

Acid ageing that may be required for other colors in the pattern is sufficient to set the binder of the metallic component; but for superior fastness, a curing operation at 300° F. for 2 mins. is recommended.

Before the prints are soaped, some printers calender the goods to flatten the print and get a better reflective surface.

If the prints have been acid-aged, they should be soaped within 8 to 12 hrs. to avoid tarnishing by the acetic acid used in the ageing process. The acid may cause tarnishing after long exposure even when protective coatings have been applied to the metallic powders by the manufacturer.

Finally, the pH of the soaping bath should be checked frequently to be sure that acetic acid has not built up in the bath in excess. Traces of acetic acid left in the goods will eventually cause tarnishing.



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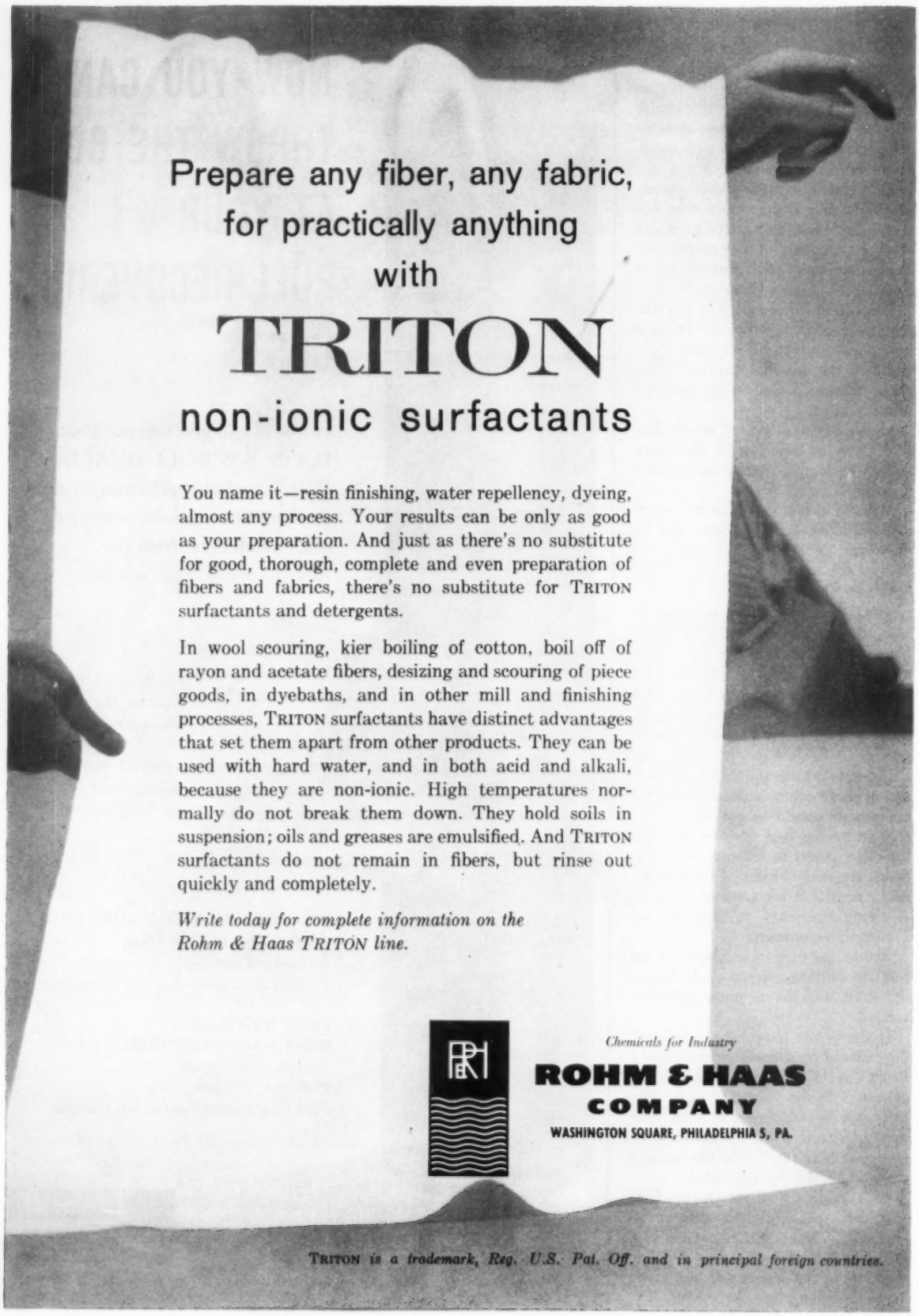

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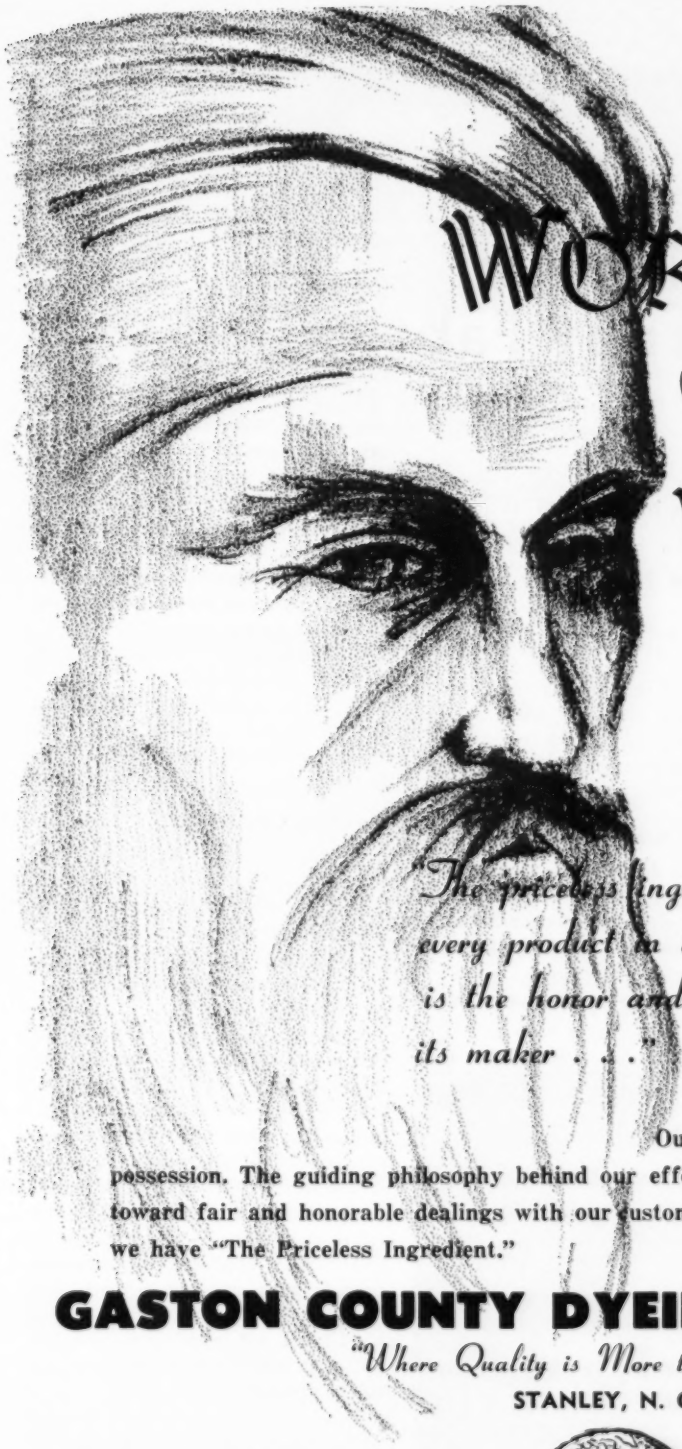

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For more data, circle A-34 on Reader Service Card

How Best Dyeing Co. Finishes Powernet Fabrics

To finish these highly elastic fabrics made from rubber-core yarns, this Elizabeth, N. J., plant—

- **Installed modern, well-instrumented equipment that is well adapted to the work**
- **Developed handling methods that retain the elasticity necessary for the end use**

WHEN BEST DYEING & FINISHING CO., INC., decided to finish the production of an affiliated raschel plant that produces powernet fabrics, it started with good new equipment and experienced supervisory personnel. With this solid foundation, the plant is successfully finishing fabrics in commercial production.

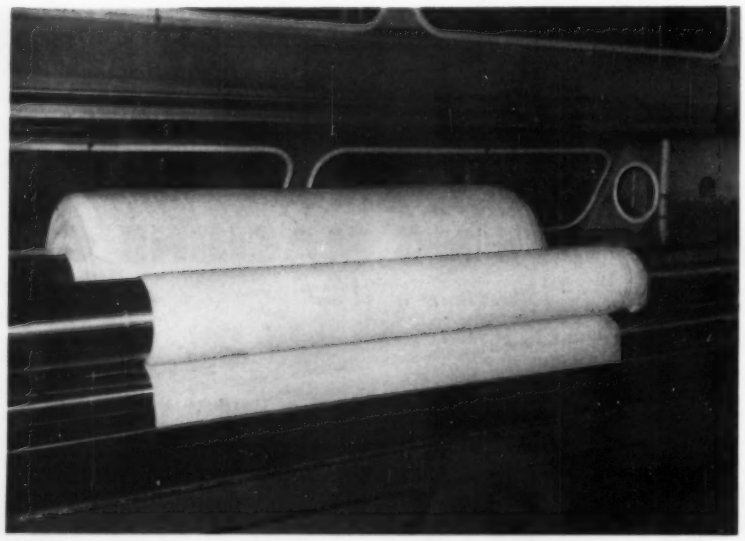
Powernet is made in a variety of widths to finish at 48 to 92 ins. and is based on rubber-cored yarns wound with nylon, cotton, acetate, rayon, or mixtures of these fibers.

Powernet fabrics of the type Best handles are made with yarns of 40 to 70 den., two plies, and are made into women's girdles.

Tensions Are Kept Low

Tension in winders, jigs, tenters, and final inspection machines has to be kept low if powernet fabrics are to come through the finishing plant with maximum elasticity.

Best handles some styles on tensionless automatic-reversing jigs that can take fabrics up to 72 ins. wide.



JIGS OF THE LATEST TYPE operate with practically no tension and reverse automatically. Covers keep temperature up with less steam and confine fumes.

Jig-dyed fabrics are first prepared by scouring for 8 to 10 ends with a nonionic detergent and TSPP at 140° F.

Whites are bleached with peracetic acid for nylon or peroxide for rayon, cotton, or acetate yarns.

Dyeing is done with disperse, acid, or direct colors according to the fiber and fastness requirements of the customer. Similar procedures are used for goods that are bleached and dyed in becks.

Finishing Sets Fabric

In the drying and finishing of powernet, control of tension is equally important. Best uses a tenter with a combination clip-and-pin chain, an overfeed, and an electrically heated curing unit built in toward the delivery end.

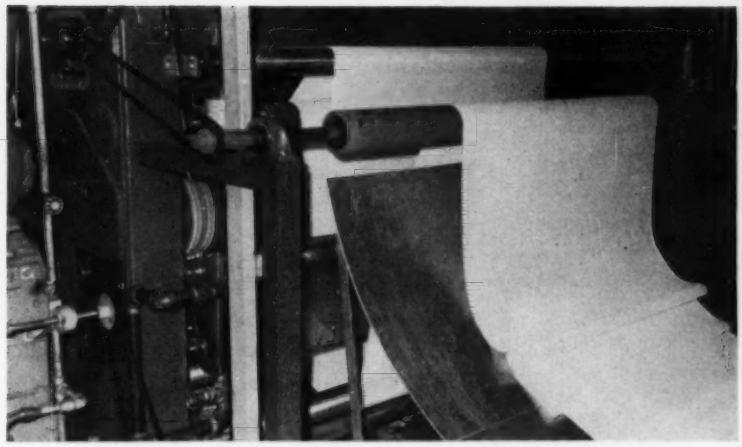
Behind the tenter is a finishing pad that is designed to give even pressure over the entire width of the nip rolls.

Each style requires particular setting of the frame for width or degree of overfeed (if any), and the frame is equipped so that any set of conditions can be duplicated quickly by reference to previous dial settings.

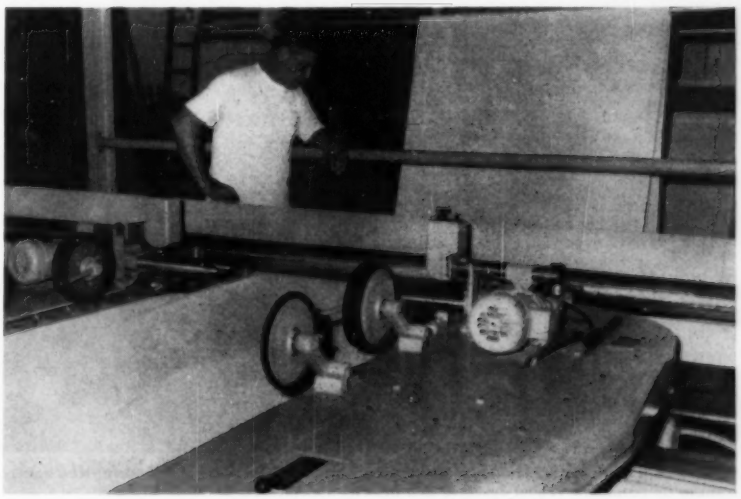
The plant applies a thermosetting resin to most styles of powernet for the dual purpose of giving the proper hand to the goods and to stabilize the fabric so that it can be laid out and cut into panels.

Each style has its normal finished width, which cannot be materially increased without running into difficulty later when the goods are made up into garments.

Some styles are decatized after framing to develop the type of hand that only this operation can give. All goods are given a final inspection and rolled on tubes for shipment.

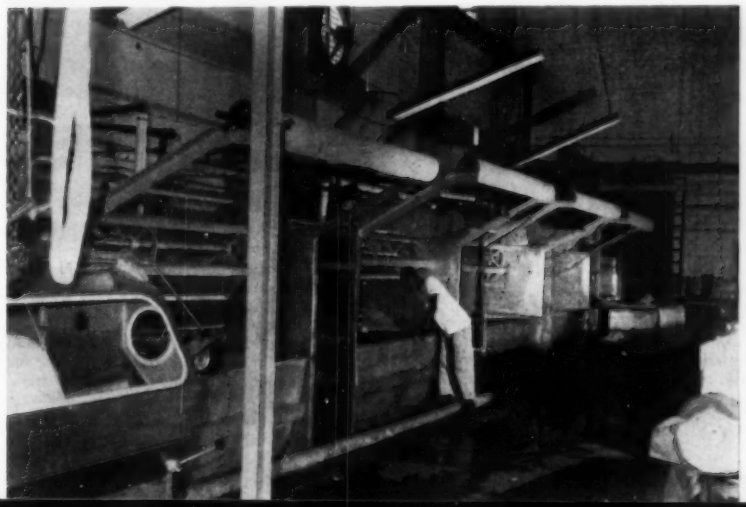


LOW TENSION is maintained in this finishing range by feeding goods from the pad to a scray ahead of the tenter. Resins are applied to fabric in the pad.



AUTOMATIC FEEDING and guiding motions on tenter help materially in reducing labor costs and insure delivery of fabric with proper dimensional qualities.

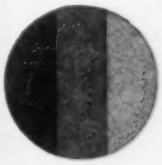
BEST has five stainless-steel dyebecks that are used for light, open, knitted powernet that does not develop crack marks.



Reduce textile flaws caused by air-borne lint, dirt, soot, abrasives, smoke with the

HONEYWELL ELECTRONIC AIR CLEANER

These airborne spoilers mean costly flaws in your finished textiles—lint spots on printed cloth, staining, streaking and discoloration. The Honeywell Electronic Air Cleaner reduces these flaws by electronically trapping airborne dirt particles 100 times smaller than those stopped by mechanical (fibrous) filters.



The left side of this dust spot paper was exposed to uncleaned air. Center section was exposed to air cleaned by a mechanical (fibrous) filter. Right side was exposed to air cleaned with a Honeywell Electronic Air Cleaner. (Actual unretouched photo of results using standard dust spot techniques).

PAYS FOR ITSELF! Send coupon today to learn how the Electronic Air Cleaner can reduce your textile rejects and improve your textile quality.

MINNEAPOLIS-HONEYWELL
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Please send free copy of Electronic Air Cleaner booklet, "A Close Look at Air-Borne Dirt."
We have the following problems:

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*Name*_____

*Company*_____

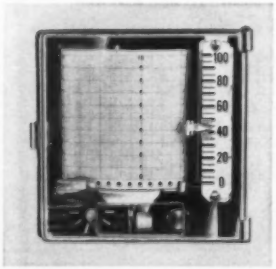
*Address*_____

*City*_____ *Zone*____ *State*____

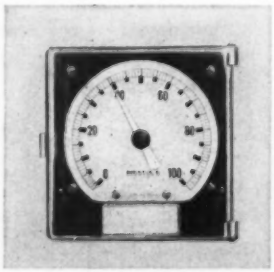
Circle A-36 on Reader Service Card

Typical Installation of Bristol Metagraphic receivers. This modern instrument installation is part of main control panel at Celanese Corporation of America's new Celanese acetate film plant at Belvidere, New Jersey. Panel designed and built by Panellit Inc., Skokie, Illinois.

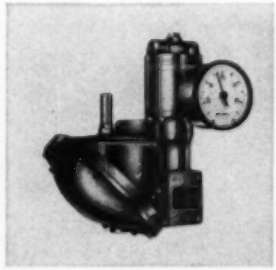
...and behind every panel, precision



Metagraphic Recording Receiver... plugs and unplugs in 5 seconds. More than 36 pneumatic models, many electronic Dynamaster* potentiometer and bridge instruments—all with easy-to-read, human-engineered scales and charts.



Metagraphic Indicating Receiver... feature 9 inches of effective scale length, complete 10-second interchangeability with recorder of same type. Functionally colored pointers, plus long scale length makes distant reading easy.



Metagraphic Pneumatic Transmitters measure temperature, pressure, vacuum, absolute pressure, differential pressure, flow, liquid level or mechanical motion. Transmit on universal 3-15 psi pneumatic signal.

Pneumatic Control Stations allow utmost in operating flexibility. Four-position station (top) for computer-controlled refineries and chemical plants. Six-position station (bottom) for bumpless transfer in cascade systems. Many others available.

regardless of the nature of your measurement or control problem,

Bristol has matching miniature instruments for it

• Pneumatic transmission and control • Electronic potentiometers and bridges • Instruments for process computer systems • Electronic measurement—pneumatic transmission • Telemetering instruments • Recording gauges

Now, for the first time, you can get matching instruments for graphic panels, consoles, or other set-ups for all your process requirements—including electronic, pneumatic, telemetering, and gauge measurements. Bristol miniature instruments all have 5" x 5⅛" panel dimensions, fit 4 9/16" square cutout, and harmonize perfectly with each other.

Pneumatic Transmission. Bristol Pneumatic Metagraphic receivers operate on a universal 3-15 psi signal. They indicate or record *pressure, differential pressure, absolute pressure, liquid level, flow, temperature, mechanical motion and many other variables.* Indicators and recorders interchange on a full plug-in basis. There are 36 receivers, 38 controllers, and widest variety of transmitters in the industry to choose from.

Process Computer Control Instrumentation. Now available: two entirely new Metagraphic control stations, for use with process control computer systems.

Dynamaster* Electronic Potentiometers and Bridges, using same time-proven principles as full-size instruments, can provide measurements from such electrical sensing elements as thermocouples, strain gauges, pH electrodes, photoelectric cells, etc. Same high accuracy and reliability as full-size Dynamaster instruments.

Electronic Measurement—Pneumatic Transmission. The Miniature Dynamaster Electronic Potentiometer and Bridge Instruments, described above, are now available as pneumatic transmitters—3-15 psi signal. They will make any measurement that can be transduced to an electrical quantity and transmit that measurement pneumatically for Metagraphic recording, indicating, and automatic control.

Telemetering. Metameter* telemeter receivers, in 5" x 5⅛" case, can receive the same measurements from remote locations as their full-size counterparts. Can be installed miles from transmitter center.

Standard Pressure Gauges . . . now also offered in miniature-case, plug-in and non-plug-in types. Ranges from 0-3 through 0-100 psi.

For complete data, write The Bristol Company, 103 Bristol Road, Waterbury 20, Conn. B-50

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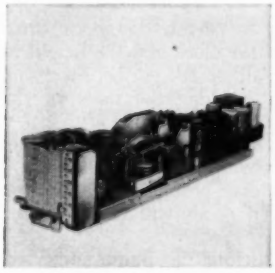
BRISTOL measurement and control



Series 663 Electronic Dynamaster potentiometer. Motor can drive almost any auxiliary devices — retransmitting slidewires, alarm contacts, analog-to-digital encoders. Available for electronic measurement—pneumatic transmission.

Metagraphic Pneumatic Controllers can plug in on receiver case, as shown here, or directly at controlled process. Proved force-balance operating principle requires almost no moving parts, nothing to wear out. 38 different models.

BRISTOL

TRAIL-BLAZERS IN PROCESS AUTOMATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

For more data, circle A-37 on Reader Service Card

A TEXTILE WORLD Refresher

Preparation and Bleaching

3. Sizing Materials and How They Are Removed

- What sizing materials are
- The brushing and singeing operation
- The acid-steep method of desizing

By PROF. KENNETH S. CAMPBELL, Dept. of Textile Chemistry
N. C. State College School of Textiles

THE SIZING OF COTTON WARPS is a necessary operation to a weaver, but the size content of fabrics is a nuisance to the finisher. Except in the case of a few styles of loom-finished goods, the finisher must remove as much of the sizing material as possible if his operations are to be successful. The size content of cotton fabric will vary between 10 and 20%.

Sizing formulas are usually based on a film-former such as starch from corn, potatoes, tapioca, or sago flour. The starches are sometimes modified by treatment with enzymes, with acid, and with hypochlorite in order to give different working properties, notably lower viscosities in solution.

Occasionally, other film-formers are used in size preparations; among them are naturally occurring water-soluble gums such as locust bean gum; partly synthetic water-soluble and alkali-soluble cellulose ethers and esters such as methyl cellulose, carboxymethylcellulose, and hydroxyethylcellulose; and wholly synthetic materials such as polyvinyl alcohol. Mixtures of starch and carboxymethylcellulose have been used with some success.

There are four classes of substances that are used to soften and plasticize the starch film on the yarn. They are animal fats such as tallow and wool grease; vegetable oils such as olive, castor, and cocoanut oil (both natural and hydrogenated); sulfonated fats and oils and sulfated fatty alcohols; and mineral oils.

Glycerine and similar polyhydric alcohols and certain hygroscopic salts are often added to the size mix as humectants; the water thus attracted provides an additional plasticizing effect. Occasionally, size mixes are used that contain inert substances such as China clay for loading or weighting purposes and penetrants to facilitate the absorption of size by the yarn. Small amounts of preservatives are often added to inhibit growth of fungi or bacteria.

Cloth from the loom has substantial amounts of loose fibers or lint on its surface. The yarns of the fabric itself are to a certain degree hairy or fuzzy, and the first treatment received by fabric in a finishing plant is often a brushing and sanding operation to remove loose fibers and to raise the short surface fibers of the yarns so that they may be singed more thoroughly.

The rotary brushes and sand rolls usually revolve in an opposite direction to the flow of cloth and can be adjusted as to pressure or clearance. If care is not taken at this point, the surface of the cloth may be unnecessarily roughed up, which may cause irregular dark spots or streaks when the goods are dyed.

This effect is apparently due to the localized rupture or removal of the cuticle or outer layer of the fibers, which allows less-restricted swelling of the fiber substance and consequently more-rapid diffusion of dye inward at those areas. Surface abrasion at other stages of processing produces a similar effect.

Singeing Cleans Surface

Immediately after brushing, the goods are singed to produce a clean, smooth surface. If the hairy surface fibers are not removed, the surface of the fabric, particularly after dyeing, is visibly nonuniform and somewhat dirty. Because the fuzz is so readily accessible to dye, it tends to dye darker than the body of the fabrics; and because of its relative sparseness and irregularity, it presents an unattractive appearance. Sometimes only the face of the fabric is singed; sometimes both face and back are singed.

Singeing is most often done by passing the goods across gas burners, with the speed of the cloth and the height of the flames balanced so that all of the raised fibers are burned off without actually scorching the body of the fabric.

Cloth speeds up to 300 yds. per min. are common. Too-severe an exposure can obviously degrade the cloth; whereas if a slight fold or crease protects an area from singeing, a dark streak in dyed goods will result for the reason mentioned above.

Chlorides of barium or calcium, as humectants and weighting agents, and zinc chloride also as a fungicide, if present in the size, are sometimes claimed to be a source of trouble in singed goods because they can accelerate damage by heat. There is reason to doubt the validity of this claim, however.

The singed cloth is pulled directly from the singer into

a quench box, which can be almost any kind of a mangle or padder and which serves the double purpose of saturating the fabric with a desizing agent while extinguishing any sparks on the fabric.

Desizing Should Be Thorough

The primary purpose of desizing is to solubilize the starch. Since the starch acts more or less as a binder, most of the other materials that are incorporated in the size mix will be released readily in the washing operation if the starch no longer holds them on the yarns.

The degree to which the size must be removed in order to provide a satisfactory bottom for further processing is apparently open to question, but there is no doubt that whatever is done must be done uniformly. The safest procedure is undoubtedly to attempt to remove the size as completely as possible from most types of goods.

The method of handling cloth in desizing is determined by the weight and construction of the cloth, the production volume, and the equipment available. It may be a batch process or a continuous one; the goods may be handled in the rope or in open width. If a very high production rate is necessary, desizing can take place in 30 secs. If schedules permit, it may take 3 or 4 hrs. or overnight.

Several distinct methods are used in desizing. All of them serve to hydrolyze the starch, splitting it into its simpler molecular building blocks such as dextrins and sugars that are soluble and easily washed out of the goods. It is naturally essential that this hydrolysis be principally directed to the starch and not to the degradation of the cellulose.

Acid Steeping Is Still Used

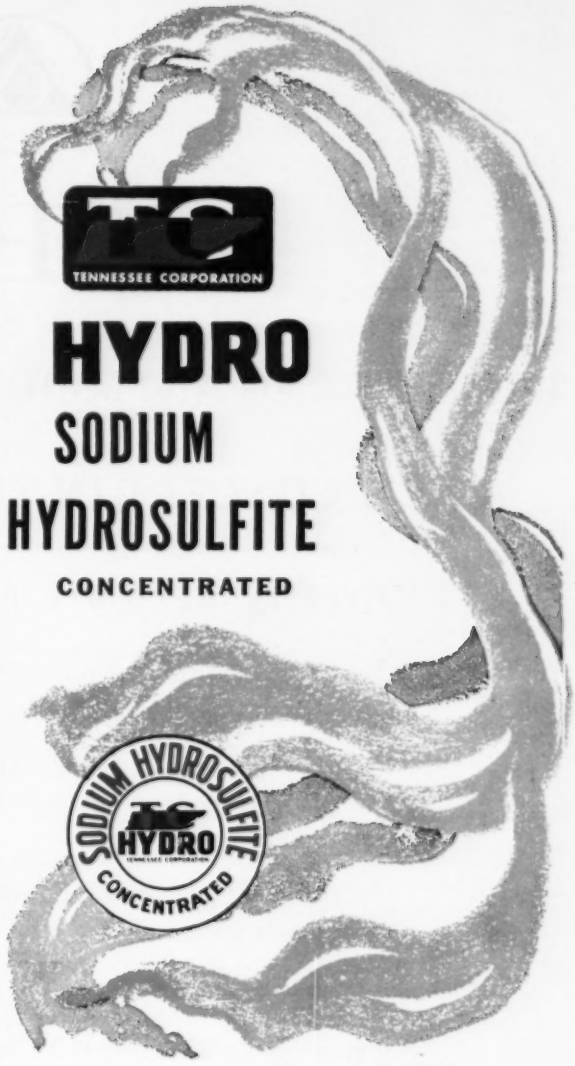
Treatment of the fabric with acid for a period of time (acid steeping or souring) is a method for starch removal that has been in use for many years. A typical procedure is to saturate the material with a 0.5 to 2.0% solution of H_2SO_4 and allow it to remain for 3 to 4 hrs. at room temperature, with provision made against any areas of the fabric drying out, which would cause tendering. The cellulose itself apparently is not attacked under these conditions.

Researchers have found that a sulfuric-acid steep at room temperature for 2 hrs. removed 66.7% of the starch present with very slight degradation of the cellulose. A temperature of 80° C. had to be used to remove 85% in 2 hrs., but this method produced such serious degradation as to be completely out of the question.

This means of desizing is considered a relatively inefficient one under conditions safe for the cellulose, and there is always the possibility of acid damage to the goods due to carelessness. However, investigations have shown that acid steeping prior to scouring has some useful effect on the yarn other than simple size removal; it increases the efficiency of wax removal in subsequent scouring and aids in producing better whites in bleaching.

For these reasons, the acid treatment is sometimes employed as the first step in a combined acid steep-enzyme desize before the caustic scour. Although sulfuric acid is perhaps more common because it is cheaper, hydrochloric acid has the advantage of forming soluble salts upon interaction with any calcium compounds that may be present; and cleansing the goods is therefore facilitated.

Some mills find that a dilute caustic-soda steep for several hours or overnight on some types of fabric, print cloth, for example, removes enough size so that satisfactory kier scouring and bleaching may be obtained. This method also softens the motes and permits somewhat shortened scouring times.



TC-Hydro is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

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When You Need it– Our production is located in the heart of the Southern Textile Industry which permits us to render over-night delivery service to most Southern points—also small lot shipments are available from centrally located warehouses.

Phone, Wire or Write for literature and test samples if desired.

TENNESSEE TC CORPORATION

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NEW

☆

THE NEW A&G ANTI-MIGRATION RADIANT DRYER

☆ ☆

A NEW CONCEPT IN TEXTILE DRYER DESIGN

Briefly, here are the salient features:

1.. Temperature of radiant surface maintained automatically at level for which the regulator is set.

2.. Goods passing through exposed for relatively long time (10 to 20 seconds) to flat surfaces at relatively low temperatures (400° to 800°F).

3.. Radiant panels cool immediately when range stops and reheat fast when range starts.

4.. Exceptionally economical in gas consumption.

5.. Large doors in housing provide easy access to all rolls for cleaning.

This Radiant Heat Dryer, the latest in a long line of equipment developed by A & G for the textile industry, is offered to textile finishers as a sure means of drying dyed goods...economically...without migration...without the need of intensely high temperature heat sources.

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will be, from July 1, 1959, CARBIC-HOECHST Corporation
—a name which better reflects our association
with Farbwerke Hoechst AG., West Germany
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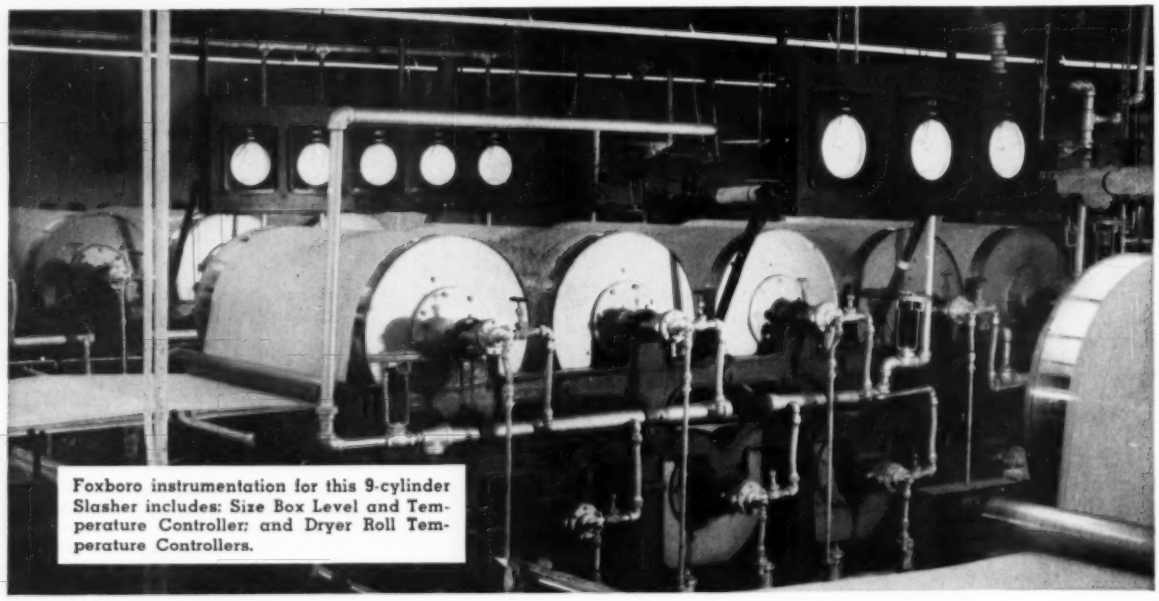
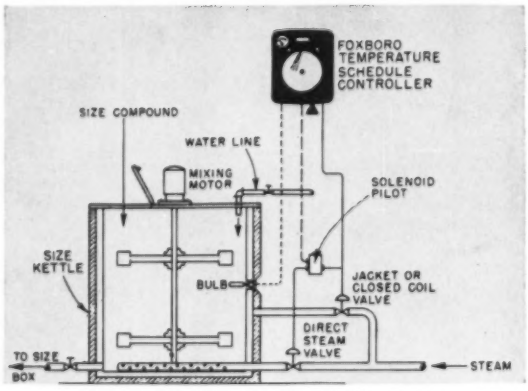
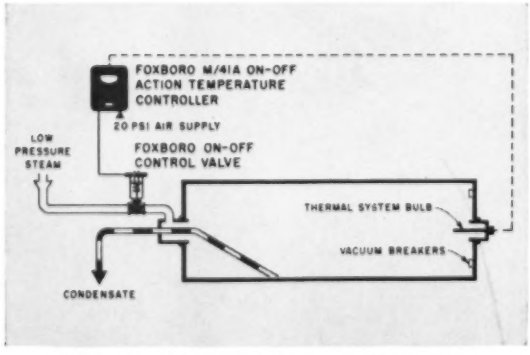
FOXBORO AUTOMATES THE SLASHER ROOM!



Foxboro instrumentation for this 9-cylinder Slasher includes: Size Box Level and Temperature Controller; and Dryer Roll Temperature Controllers.



Foxboro Dual-Purpose Size-Kettle Control



Foxboro On-Off Control System for Dryer Rolls

complete control system:

- **cooks — stores size at proper temperatures — automatically**
- **holds dryer roll temperatures constant — automatically**
- **maintains accurate, continuous records of yarn stretch**

From size box to dryer roll you can depend on Foxboro control to increase the efficiency of your Slasher operation.

Take Foxboro's Dual-Purpose Size-Kettle Temperature Schedule Controller, for example. This exclusive instrument controls the temperature of BOTH size cooking and storage — with direct steam and jacket heating. Temperature shifts are automatic — no hazards of boil-over. And size dilution is completely eliminated — regardless of storage time.

Or take Foxboro Dryer Roll Temperature Control. This simple, on-off system developed by Foxboro eliminates compressed air purge in the removal of steam condensate . . . even as low as 140°F!

And for over-all Slasher Room efficiency, don't overlook yarn stretch recording, size box level control, viscosity recording, and pneumatic squeeze roll loading. These, too, are Foxboro-engineered to improve yarn quality . . . automatically. Write today for full details. **The Foxboro Company, 846 Neponset Ave., Foxboro, Massachusetts, U.S.A.**

FOXBORO REG. U.S. PAT. OFF. **SLASHER ROOM CONTROL**

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STARCH and CHEMICAL
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The addition of the word 'CHEMICAL' in our new corporate name reflects not only our increased interest in chemicals and chemical products . . . but also the important part that chemistry has played in the selective research and development of new starch derivatives.

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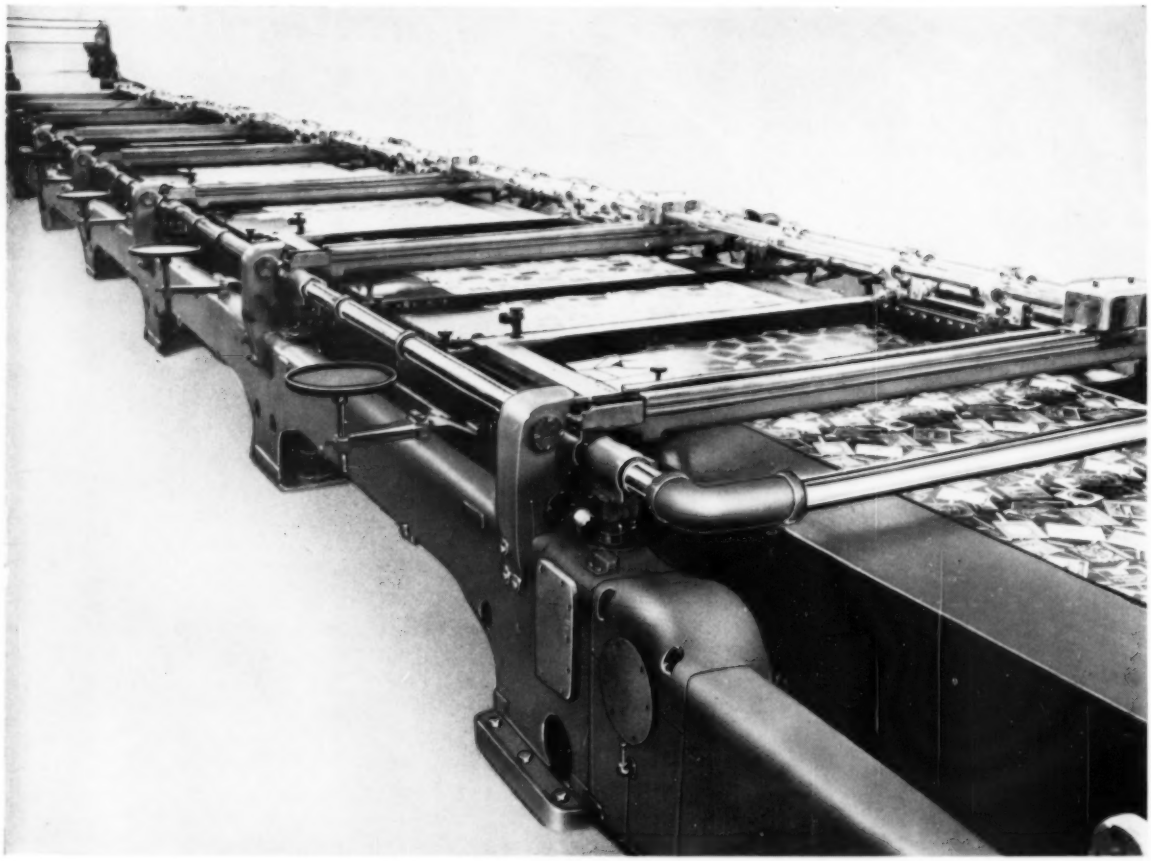

Screen print up to 12 yds. of fabric per minute with an

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The Ichinose screen printing machine, with more than 60 patented improvements, screen prints all kinds of fabric perfectly in up to 14 colors at nearly double the speed of other machines on the market. Finished prints are of highest quality: clean, sharp, accurate and far superior to hand or roller prints.

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A TEXTILE WORLD Refresher

The Basic Chemistry Of Dyes and Dyeing—IV

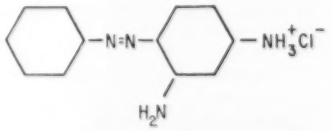
- Basic dyes
- Disperse dyes
- Natural dyes and pigments

By WILLIAM POSTMAN, Ph. D., Asst. Professor of Textile Chemistry & Dyeing
A. French Textile School, Georgia Institute of Technology

BASIC DYES

THE FIRST DYESTUFF commercially produced from coal tar, Perkin's mauve, was a basic dye. Dyes of this class are defined as cationic dyes that are substantive to tannin-mordanted cotton; that is, they are dyestuffs in which the colored portion carries a positive charge in solution and which will not dye cotton unless the fiber is first mordanted with tannic acid.

The basic dyes are used to only a limited extent for coloring cotton, wool, and silk because their fastness properties are very poor when applied to the natural fibers. They are used, however, to produce brilliant shades on nylon, Orlon, and other man-made fibers, on which their fastness properties are much better.



C.I. Basic Orange 2

represents a simple basic dye, characterized by the presence of basic auxochrome groups (the $-NH_2$ groups) and the familiar azo ($-N=N-$) chromophore. Water solubility of these dyes is obtained by reacting the base, $-NH_2$, with hydrochloric acid, to form the water-soluble salt $-NH_3^+Cl^-$.

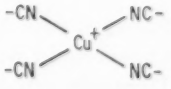
How Basic Colors Dye Orlon

It has been suggested that during the manufacture of Orlon, acidic groups such as $-SO_3^-$ are formed, possibly at the ends of the polymer chains; the negative charge is neutralized by a colorless cation, for example Na^+. When this fiber is dyed with basic dyes, there is a displacement of the colorless positively charged ions by positively charged dye ions (a so-called ion-exchange mechanism). The ability of Orlon to take up basic dyes is therefore limited by the number of these acidic sites in the fiber.

Basic dyes exhaust rapidly from the dyebath during the first few seconds of dyeing; that is, they have a high rate of strike. Retarding agents are therefore necessary to prevent this initial rapid exhaustion, which causes unlevel dyeing.

The retarding agents that are used when basic dyes are applied to Orlon are colorless cationic compounds that compete with the colored positively charged dye ions for the available sites in the fiber. This reaction tends not only to slow down the rate of dyeing but also to reduce the total amount of dye that can be taken up in attempting to produce medium to heavy shades.

This picture of the Orlon dyeing process with basic dyes is very similar to that used to explain the acid dyeing of this fiber by the cuprous-ion method. Although there are sites for the positively charged basic dyes in the fiber as formed, no such sites exist for negatively charged acid dyes. In the cuprous-ion method, sites for negative acid dye ions are introduced by the formation of Cu^+ ions that are held by the $-CN$ groups in the fiber:



The positive charge of the copper ions is neutralized by colorless anions (for example $-SO_4^{--}$). The negatively charged acid dye ions then replace the colorless anions and are held in the fiber by the electrostatic force of attraction of oppositely charged bodies.

CONTINUED ON PAGE 94

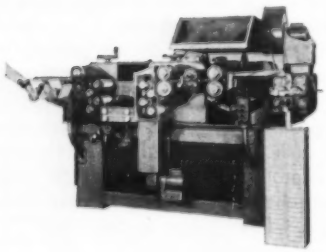
"I never knew you people made all these machines"

He was standing in a production bay at the Turbo plant. He's a division superintendent for one of the large textile manufacturers.

He had seen the Turbo engineering department, the research and development division, production, assembly, and demonstration machines in operation.

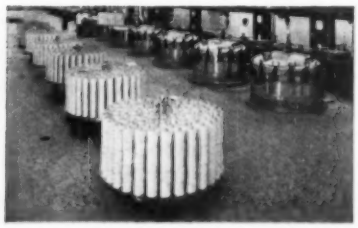
"I am simply amazed at the diversity of the Turbo operation — in textile machines, foundry machines, metalworking, electronics, and general industry," he said. "I never knew you people made all these machines."

You, too, should know the family of Turbo machines, carefully engineered, proved under mill conditions for increased production, better quality, lower costs . . . and backed by a strong service-minded organization.



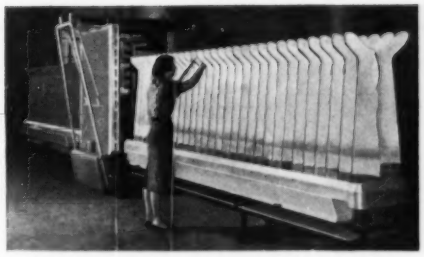
The Turbo Stapler is used by more than 50 leading spinners to convert synthetic tow to the finest staple. Drastically cuts doubling, drafting, and roving operations. Denier, staple length and crimp are under the operator's complete control. Turbo Orlon*, featured by almost every manufacturer of knitted outerwear, starts as tow on a Turbo Stapler.

*DuPont T.M. for its acrylic fiber

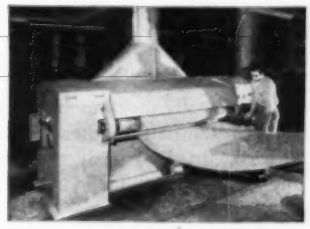


Smith-Drum Package Dyeing Machines, a member of the Turbo family of high-production machines, are first choice for high-temperature, high-pressure dyeing. A sample-package kier permits sampling without interrupting main lot dyeing. A high-pressure, dye-feed kier allows dye bath additions without pressure or temperature changes in the main body of the dye liquor.

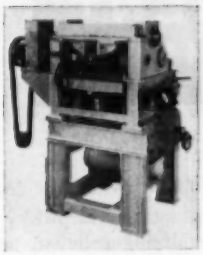
Modified filament sweaters are "set for life" in the Turbo Sweater Setter, a tray-type machine with a production rate of 400 dozen sweaters per 8-hour day. Electrical timers regulate the vacuum and steam cycles to insure uniform setting. Nothing for the operator to do except load the carriers. Turbo heat-setting machines are used throughout the textile industry for the precision setting of fibers, yarns, fabrics, and finished garments.



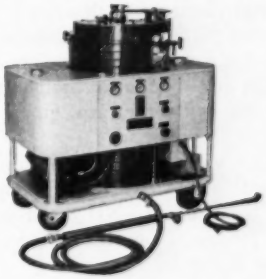
The Turbo Dye Boarder is a complete hosiery dyeing and finishing operation with a production of 140 dozen pairs in 8 hours with one operator. High penetrating action gives desired elasticity so that mills can make substantial savings by using raw pirn instead of pre-shrunk yarn. Other Turbo Machines for hosiery processing include preboarders, finish boarders, a combination of both, boardless dryers, and the Turbo-Brewin Machine for combination preboarding, dyeing, and finishing.



The Turbo Electro-Finisher changes the appearance and character of woolens, wool blends, and high pile fabrics. An electrically heated cylinder separates and straightens the fibers, then polishes them to a vibrant luster. Cylinder temperature is accurately controlled so that every inch of fabric width, every foot of fabric length is finished precisely alike. Production speeds — 3 to 30 yards per minute.



Turbo Crimpers are used by major fiber producers to make the crimping of synthetic fibers a uniform, high-production operation. Crimp can be varied by adjusting a single knob.



The Turbo Steam Cleaner is the plant engineer's best friend. It's a heavy duty unit designed for continuous, uninterrupted production. Congealed grease, size, lint, and dirt are loosened and washed away. Choice of oil-fired and electric models. Completely safe. Pays for itself.

★ ★ ★

This is just an introduction to the Turbo family of engineered machines. Turbo serves many industries not even mentioned here, including foundries, metalworking, and electronics.

When you buy a Turbo Machine you get *results*. Operators are quickly and easily trained. Machines are automated wherever possible. Maintenance is reduced to a minimum. Talk to a Turbo engineer about your requirements.

TURBO

. . . a family of engineered machines

TURBO MACHINE COMPANY, LANSDALE, PA.

For more data, circle A-46 on Reader Service Card

DISPERSE DYES

The disperse dyes were developed by the dyestuff industry specifically for dyeing cellulose acetate. These dyes have small molecules that are only slightly soluble in water. Typical examples are C. I. Disperse Yellow 14, C. I. Disperse Orange 3, and C. I. Disperse Violet 4 (Fig. 1). These three dye structures represent the three chemical classes of disperse dyes.

The yellow dye is a nitroarylamine; that is, it consists of aromatic rings (benzene in this case), substituted with nitro groups (the chromophores), attached to the —NH.

The orange dye is an aminoazo compound: azobenzene substituted with an $-NH_2$ auxochrome and a nitro group (which, together with the azo group, constitute the chromophores in the molecule).

C. I. Disperse Violet 4 is an aminoanthraquinone: anthraquinone with its two C=O chromophores, and two auxochromes, the amino ($-NH_2$) and substituted amino ($-NHCH_3$) groups. Note the absence of solubilizing groups in these molecules.

The violet dye is susceptible to gas-fume fading. It undergoes a shade change on cellulose acetate when it is exposed to oxides of nitrogen that are formed when fuels such as gas or coal are burned in air. This particular dye becomes grayer and duller, then very much grayer and duller, and finally (after an 80-hr. exposure) a pale pink in color.

This fading, which is noticed especially with anthraquinone blue and violet disperse dyes on cellulose acetate (but not when dyed on other fibers such as nylon or Orlon), can be inhibited by the addition of basic compounds such as borax, urea, etc., either after dyeing or to the dyebath.

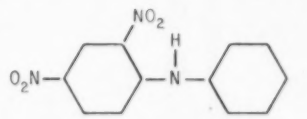
The disperse dyes are applied to textile fibers from a neutral or slightly alkaline bath in which the very finely divided dyestuff particles are dispersed. Because of their limited solubility in water, acetate dyes are not actually dissolved for application to textile fibers but are dispersed in the dyebath. The presence of a dispersing agent (soap or synthetic agents) is necessary to prevent agglomeration of the dyestuff particles in the bath.

Only recently, however, has the true importance of the dispersing agent been realized. The soap (or other dispersing agent) serves not only to keep the dyestuff particles suspended in a very finely divided form but also tends to retard the rate of dyeing and reduce the percentage of exhaustion.

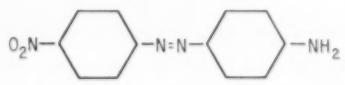
When a disperse dyebath is prepared, only a small amount of the dye dissolves in the water; the rest remains in suspension. When cellulose acetate is placed in this dyebath, the fiber takes up the small amount of dissolved dye, which makes room in the water for more of the suspended dye to dissolve. As more dye dissolves in the water, it too is taken up by the fiber; and this process continues until exhaustion is complete.

Thus it is believed that the dyeing of cellulose acetate with disperse dyes is effected only with that small portion of dyestuff that actually dissolves in the aqueous phase of the dyebath. In addition to their usefulness for dyeing acetate and triacetate, disperse dyes are used in the dyeing of essentially all of the man-made fibers except viscose and cuprammonium rayons.

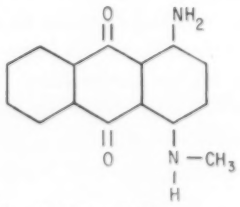
Fig. 1



C. I. Disperse Yellow 14



C. I. Disperse Orange 3



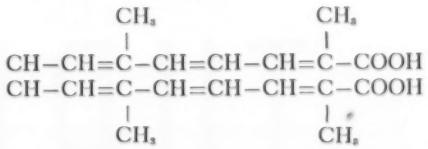
C. I. Disperse Violet 4

NATURAL DYES AND PIGMENTS

Under this heading, the Colour Index lists all those dyes and pigments "that are obtained from animal or vegetable matter with no, or very little, chemical processing." Most of the natural dyes are mordant dyes, and many are mixtures of two or more colored substances. Their main use at the present time is by handicraft workers.

Although the natural dyes are of little commercial importance today, a few remarks about some of them might be of interest.

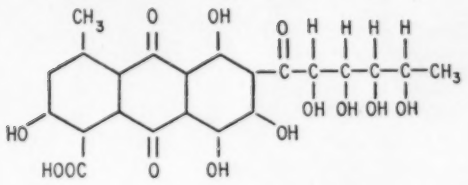
Saffron (C. I. Natural Yellow 6), obtained from flowers of saffron, has the formula:



The color of this long-chain acid is attributable to the presence of the so-called conjugated system; that is, the system of alternating double and single bonds ($-C=C-C=C-C=C-$ etc.).

Carmine, also called cochineal or kermes, is obtainable from the dried bodies of the female of an insect that lives on cacti of the prickly-pear family. About 10% of this

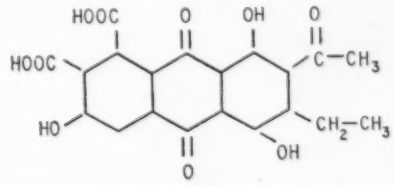
material is carminic acid, C. I. Natural Red 4, an anthraquinone derivative:



C.I. Natural Red 4

Madder, C. I. Natural Red 8, which is obtained from the root of the madder plant, is a mixture of several coloring matters, all of which are substituted anthraquinone derivatives.

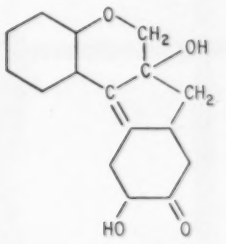
Laccaic acid:



C.I. Natural Red 25

comprises approximately 50% of the solidified exudate of an insect, coccus laccae, from which lac dye is obtained.

Logwood, C. I. Natural Black 1, or Logwood Black, is obtained from a tree grown in the West Indies and Mexico. The principal coloring matter present in this natural dye is hematin:



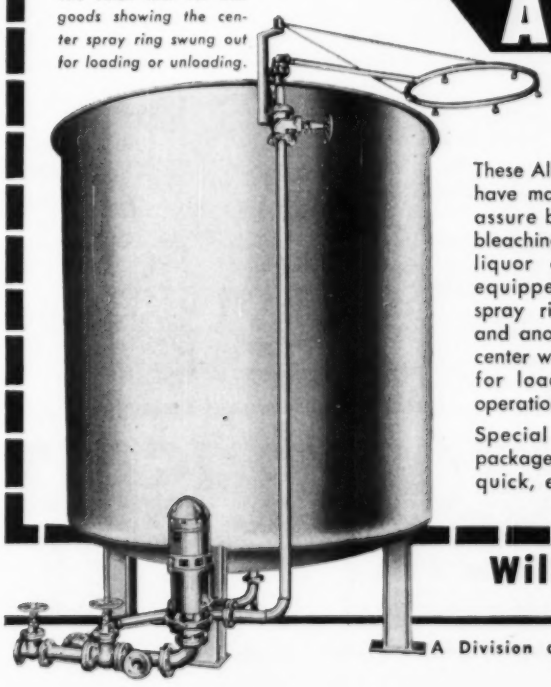
C.I. Natural Black 1 (Hematin)

Logwood is still used in commercial dyeing, particularly for silk on which fine bloomy blacks are developed on an iron-tannate mordant. Silks that have been weighted with tin phosphate are further weighted by dyeing them with unoxidized hematin crystals from a soap bath, followed by dyeing with fully oxidized hematin crystals without further mordanting for a jet black. Iron tannate applied between dyeings will produce a blue black.

Logwood blacks on wool are applied on a chrome or iron mordant, and frequently the dyeings are aftertreated with chrome or ferrous sulfate to improve fastness or modify the characteristic blue black to jet black.

Especially Designed for Bleaching **KNIT GOODS**

The Allen Kier for knit goods showing the center spray ring swung out for loading or unloading.



ALLEN Stainless Steel **KIERS**

These Allen stainless steel kiers have many advantages which assure better, more efficient bleaching. For finest bleaching liquor coverage, they are equipped with a stationary spray ring on the periphery and another ring covering the center which can be swung out for loading and unloading operations.

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SPECIAL ADVANTAGES

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Write today for circulars giving complete information on this as well as "Package Design" cloth kiers and kiers for absorbent cotton or cotton batting.

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Colors are truer, re-runs fewer with Morton Chemical grade '999' salt

Tests for color standards show that dyes often are less effective when you use salt of average purity. Quality control methods will show best results with high purity Morton Chemical Grade '999' Salt. It's the all sodium salt, sodium chloride and a trace of sodium sulphate, that many dye manufacturers use in testing their dyes before they are sent to you.

When you use Morton Chemical Grade '999' Salt in your operation, it complements your dyes . . . makes them more effective and helps you get softer finishes, more even shades and greater color intensity. It's easy to see why. Morton Chemical Grade '999' is more than 99.95% pure sodium chloride. It is a low cost, high purity evaporated salt free from objectionable calcium and magnesium compounds that may precipitate or react with dyes to reduce their effectiveness.

Available in 100-lb. bags or bulk, Chemical Grade '999' is recommended for use *whenever commercial calcium-free salt* is required. It's specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct, or naphthol dye.

Morton offers you intermediate grades of salt, too

In addition to Chemical Grade '999' Morton produces several other grades of high-purity salt for textile use. As the only nationwide salt company, Morton can supply the kind of salt and service you require, regardless of your size, particular operation or your location.

- ☐ Please send me more information about Morton Chemical Grade '999' Salt.
- ☐ I would also like to consult with a Morton representative about the other intermediate grades of salt Morton offers the Textile Industry.

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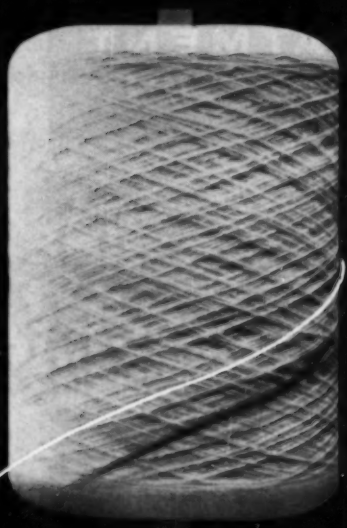
For more data, circle A-49 on Reader Service Card→

GDC DYES THAT SIMPLIFY COLORING OF SYNTHETICS



Genacryl

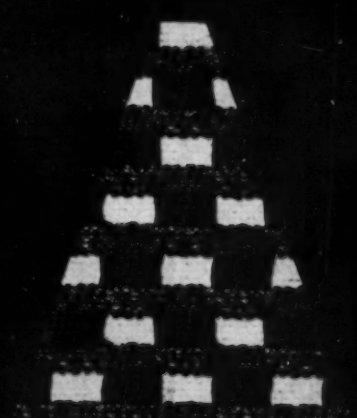
Cationic dyes for acrylics.

Genacryl dyes are modified basic dyes characterized by exceptional brightness, good to very good light fastness in full shades and very good washing fastness. They produce especially bright and fast colors on Orlon* and Acrilan† at low cost.

Celliton

Disperse dyes for all synthetic fibers.

Celliton dyes are the most versatile and practical for fast shades on acetate, triacetate, and polyester fibers. On acrylic fibers, they produce light shades of excellent wash and light fastness. On nylon, they produce clear, level, fast shades, free of barré.



From Research to Reality

Genacron

Disperse dyes for polyester fibers.

Genacron dyes are a specially standardized range of dispersed dyes for application on polyester fibers. They produce heavy shades which are fast to light, sublimation and washing. They have minimum staining effect on wool or cotton and are non-tarring.

Supralan

Premetalized acid dyes for acrylics and blends with wool.

Supralan dyes build up well into full, level, fast shades at low cost on nylon and acrylics and blends with wool. Neutral dyeing, Supralan dyes minimize fiber damage and shorten processing time.

GDC continues to keep pace with the expanding synthetic fiber industry by developing modern dyes and application techniques. Call on GDC for assistance with any dyeing problems.

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CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. PROVIDENCE • SAN FRANCISCO • IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LTD., MONTREAL

*DACRON AND ORLON ARE REGISTERED TRADEMARKS OF E. I. DUPONT DE NEMOURS & CO. (INC.) FOR THEIR POLYESTER AND ACRYLIC FIBERS. †ACRILAN IS A REGISTERED TRADEMARK OF CHEMSTRAND CORPORATION.

How Carlisle Finishing Co. Checks Print-Shop Production

A blow-by-blow account of what's going on in the print shop is recorded in the plant manager's office at Carlisle Finishing Co., Carlisle, S. C. By glancing at a strip chart delivered by a central recording machine, management can tell—

- **Which machines are actually in production**
- **How fast they're moving**
- **What's causing the delay if they're shut down**

CENTRAL RECORDER is mounted in a cabinet in the manager's office. Solid dark lines indicate machines that are running at full speed.

CENTRAL RECORDING of print-shop production at Carlisle Finishing Co. keeps management well advised of what's going on in this key department.

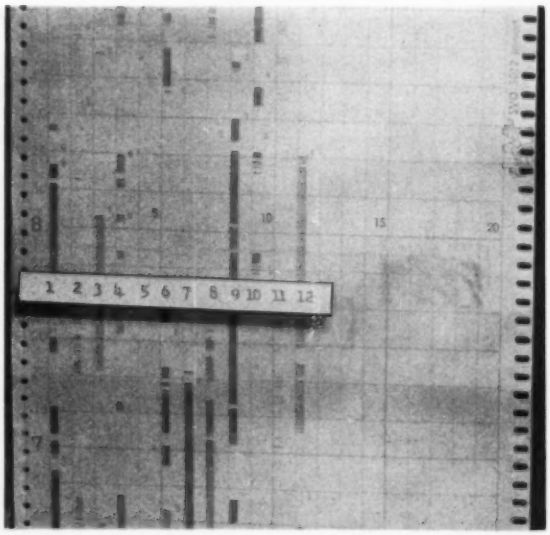
The record provided by the strip chart that flows from the recorder also serves as a basis for a permanent record of the production of each printing machine.

The production department uses the strip chart to figure the efficiency of each machine and its operating team and is able to allot downtime costs to one or more of several standard conditions that are responsible for downtime.

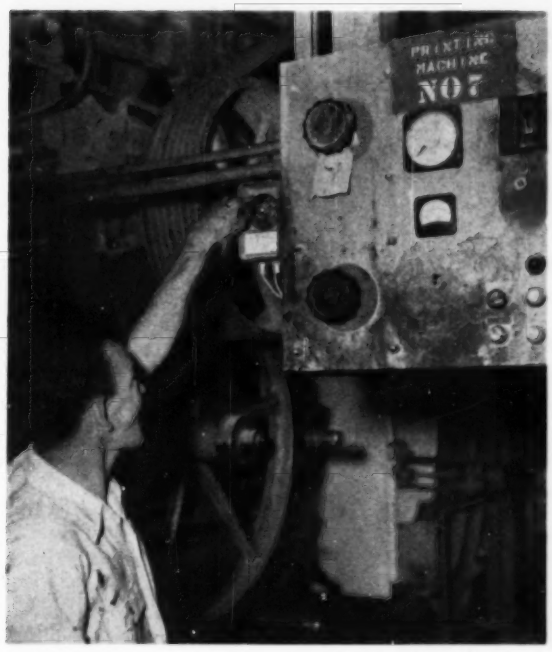
How the System Works

Each printing machine has an impulse generator that actuates a matching key in the central recording device. If the printing machine is running, the generator causes the key to print a short bar on the strip chart. The bars are spaced according to the speed of operation, and the chart is ruled off in hours and 10-min. intervals on a 24-hr. basis.

When the machine is at normal production speed, the bars are printed fast enough to form a solid line; but during start-up intervals or pattern-fitting and adjusting periods, the bars are spaced at varying intervals.



DETAIL OF CHART shows divisions into rows for machines and hour and minute time intervals that are used to work up production records.



PRINTER dials proper number assigned to the stop he has just made. The number is recorded on the strip chart in office.

When the machine is shut down for any reason, the operator works a dial similar to the type used on a telephone. He dials one of 10 numbers, each of which has been assigned to some specific shut-down cause.

This figure is recorded on the strip chart and as long as the machine is down, no other mark appears on the chart.

Knowing Beats Guessing

Printing machines are subject to several stock reasons for being shut down. Carlisle numbers the following categories to pinpoint shutdown causes:

0—Change pattern
1—Change color combination
2—Shade patch
3—File doctor
4—Roller repairs
5—Clean color; wait for color; fix color
6—Wait back grays; wait cloth; wait rollers; install grays
7—Reverse rollers
8—Machine repairs
9—Customer decision; blanket lap; cloth breaks

The numbers assigned to each category coincide with the control-dial numbering, and a printer dials the proper number when he has to shut down his machine.

Aside from being a valuable source of data, the control system exercises a certain amount of psychological effect.

A printing machine operates most efficiently when all the auxiliary services it needs are provided on time and are of the proper quality. Those tell-tale numbers point up the weak spots immediately and are a great deterrent to alibis and poor cooperation between departments.

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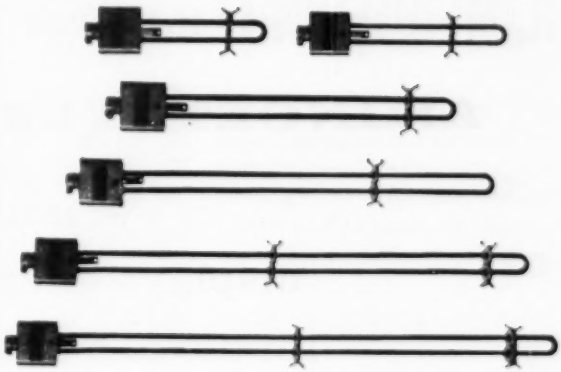

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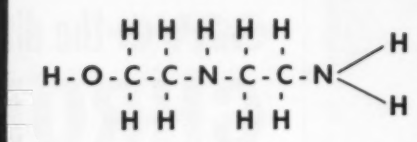

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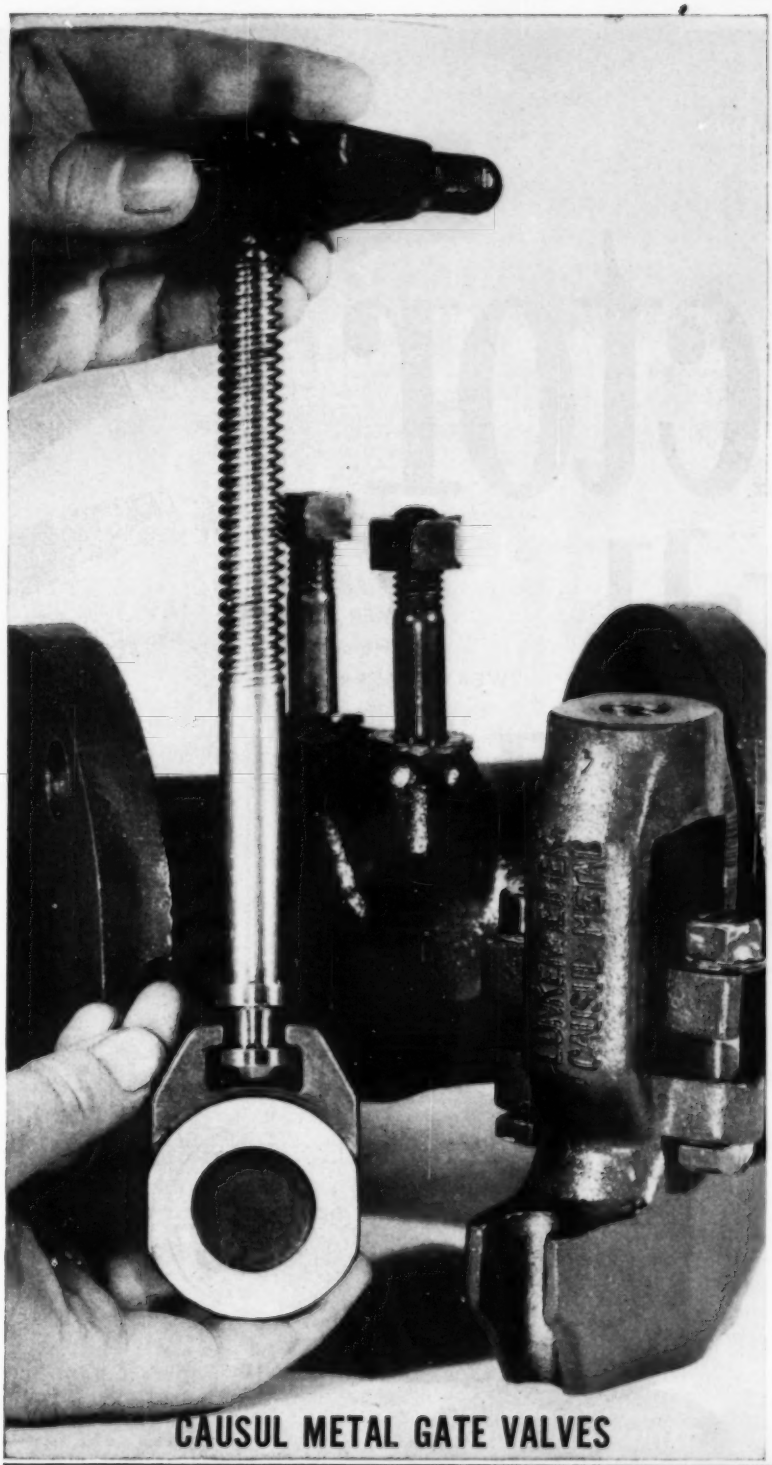
Typical properties of AEEA are listed below. Samples and literature are available upon request from THE DOW CHEMICAL COMPANY, Midland, Michigan, Technical Service and Development, Department 512FE6.

PROPERTIES

Boiling range, 760 mm. Hg (IBP-DP)	243—245° C.
Specific Gravity, 25/25° C.	1.028
Refractive Index, 25° C.	1.484
Viscosity at 25° C., centistokes	96.8
Flash Point	270° F.
Solubility (gms. per 100 gms.)	
Water	∞
Acetone	∞
Methanol	∞
Benzene	<0.1
Carbon Tetrachloride	<0.1
n-Heptane	<0.1
Ethyl Ether	<0.1

THE DOW CHEMICAL COMPANY · MIDLAND, MICHIGAN



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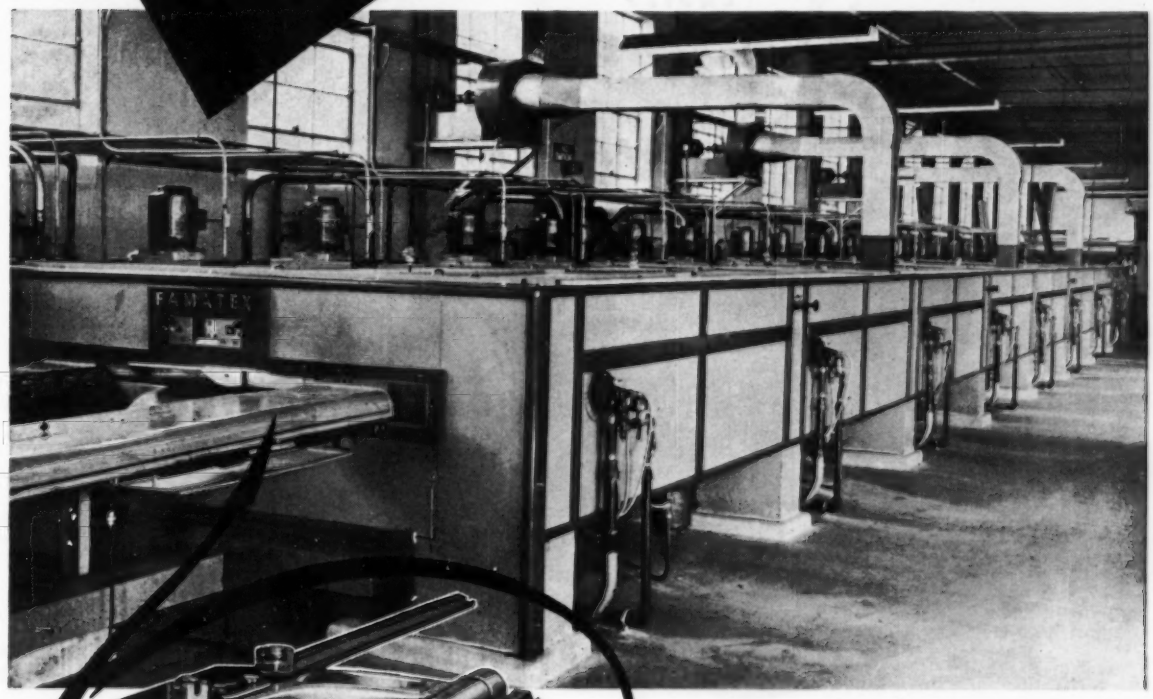

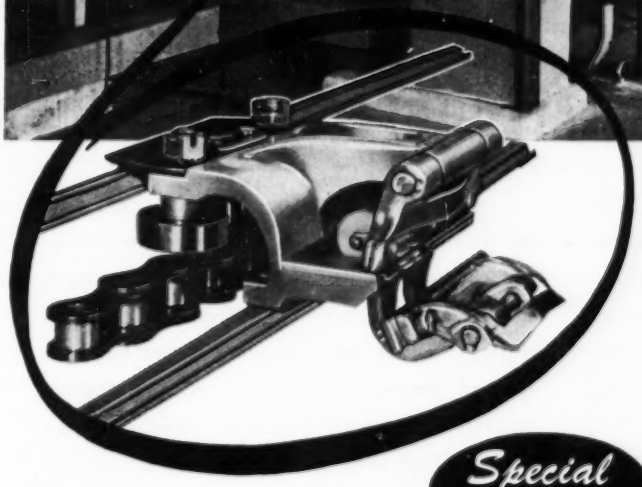

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The Motivational Approach to Safety

• Experienced supervisors realize that motivational techniques are a help to them, a supplement of their own efforts, rather than a complete safety program. Here's a look at what these techniques can and cannot accomplish.

By **JAMES E. GARDNER,** Assistant Director of Personnel Research, Fieldcrest Mills, Inc.

Normal people don't have accidents on purpose, at least not with conscious intent. This being so, a safety program that relies exclusively on motivational techniques cannot expect to produce substantial or consistent results.

Such programs assume as their very basis, whether recognized or not, that people can avoid accidents by intent; that is, by trying just a little harder. The assumption is that employees can be induced to "work safe" in the same way they are induced to give money in a fund-raising campaign or to pick cotton from the floor in a waste-conserving campaign or to clean up their backyards in an antilitter drive.

Fortunately, the safety programs in most progressive companies are well rounded programs that use motivational techniques as only one phase of a many-sided approach. But since the motivational side is the one mainly exposed to public view, it may take on, in a supervisor's mind, an undeserved importance.

Motivational techniques can indeed be important in producing safety when they are wisely used and when they are used in combination with other measures. Even standing alone, they are better than nothing. Simply as successful advertisements of safety, they may have some value. The intent of this article is not to advocate their elimination but, in the interest of better utilization, to examine their limitations in the promotion of safety.

Here are some of the more-common devices used.

1. The setting of goals. The bogey to be beaten or attained may be the industry average or the previous year's record in the specific plant. It may be an arbitrarily set figure. It may take the form of a "no-accident" period of time.

The setting of realistic goals is a good idea if the employees know specifically what they must do, within their control, to prevent accidents. Drumming at them with only other motivational devices is not enough.

2. Knowledge of progress. The employees are usually informed by poster or employee newspaper concerning the frequency and severity rates for the department or mill for a certain period of time or the cumulative total of accident-free manhours as of the current date.

This sort of knowledge is most effective if the employee is also given a clear idea of what he must do to improve the accident rate. The employee may see little connection between his own actions and the record of the department or mill as a whole.

This attitude is not merely a matter of the small effect one man exerts on a departmental record involving many people. There may also be, in addition, the suspicion that the combined actions of all the employees in the department may have little influence on the department's accident rate.

It is not uncommon to hear such a statement as this: "One month our rate was low. The next month we did the same things and the rate was high. We can't figure it."

Where accident rates can be tied to operator actions, it should certainly be done in order to get the most from our running records of accidents.

3. Competition. In many cases an effort is made to stimulate competition between departments or mills or both. But aside from the difficulties of settling upon an index that will take account, in an equitable way, of differences between departments or mills in regard to manhours of exposure and operator hazards, there is a more serious objection to the use of competition.

It can easily lead to a perversion of the purpose of the contest. The emphasis may shift from the prevention of accidents to the disguising of accidents. There is sometimes an absurd effort made to dig up assignments for the injured employee so that he may be brought into the plant and thus avoid incurring any actual loss of time.

Again, the matter of control cannot be ignored. If we are in genuine competition, our relative skill should decide the issue. A contest that is settled by mere chance is not competition but a gamble.

There must be some assurance, then, that an equitable basis for competition exists and that genuine competition can actually take place. If these conditions are met, competition can be a real prod.

4. Awards. These devices are actually part of the competitive arrangements and are subject to the same criticisms. In addition, there can be the unjustifiable

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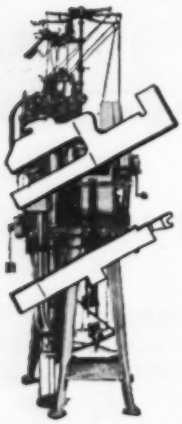

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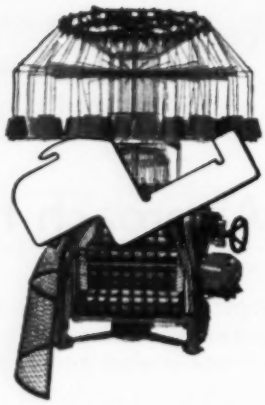

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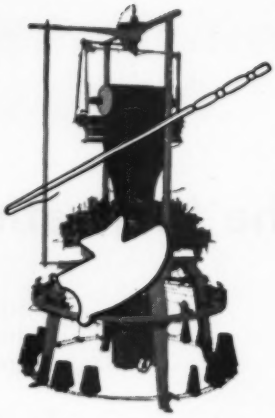

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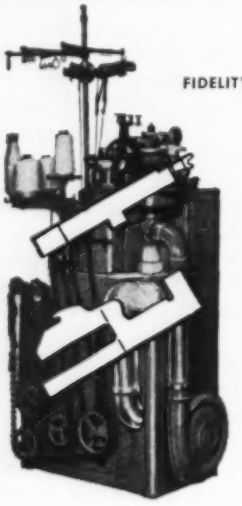

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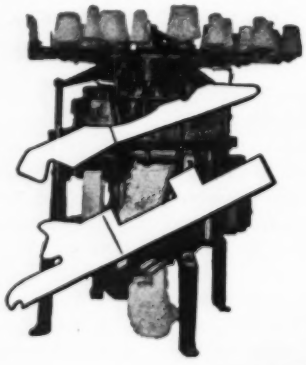

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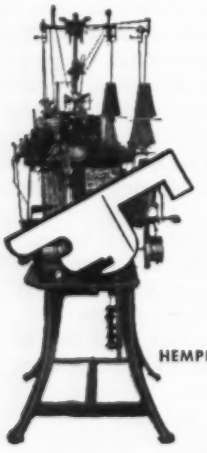

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More-Dyeable Darvan

A modification of Darvan that is more dyeable has been developed by B. F. Goodrich Chemical Co. It is called Darvan X-7.

The new fiber can be dyed in a wide range of colors, including deep shades and black, at the boil. It can be dyed as raw stock, top, skeined yarns, or piece goods.

Darvan X-7, the company said, has an affinity for a wide range of dyestuffs, including disperse, developed acetate, naphthol, neutral metallized acid, metallized acid, chrome, and cationic dyes. Union dyeing can also be achieved. Dyeing time is also lessened.

Printed Acrilan Jersey

Allen Knitting Mills, Inc., has introduced Allenella, a new line of wash-and-wear prints in Acrilan jersey. The prints are guaranteed to be colorfast and nonpilling.

Men's, women's, and children's garments made of Allenella will be available this fall.

Golden Tire Cord

A new nylon 6 tire-cord yarn was announced last month by Allied Chemical. Called Golden Caprolan, the yarn is the first successful nylon tire yarn made from a caprolactam base.

Golden in color, in contrast to the white color of other nylon tire yarns, the new yarn is of the same type of nylon as the company's textured Caprolan now widely used in carpeting and upholstery fabrics.

The chief characteristics that make the new yarn suitable for tire use are said to be resistance to heat, flex fatigue, and water.

The heat-resistance qualities come from a polymer additive, which also gives the final yarn the golden color.

The yarn has been tested both in laboratories and in tire road tests, Allied says. It is currently being used by all major tire manufacturers.

Production figures were not given; but in February the nylon plant at Hopewell, Va., reached full production (rated at 20-million lbs. a year), a major portion of which is the new tire yarn.

A New Line of Naugaweave

United States Rubber Co. is introducing a new line of Naugaweave called Advance. It is being produced for furniture upholstery.

It is manufactured in the company's Stroughton, Wis., plant by a process that combines vinyl and fabric, with valley printing and embossing. Metallic flitters highlight the surface.

The printing of blended colors deep into the textured surface gives a three-dimensional effect

It is available in 10 colors: blue, mocha, gold, cardinal, spice brown, turquoise, grass green, charcoal, tangerine, and antique white. It is 54 ins. wide and will be sold in 30-yd. rolls.

New Textures and Colors

Avondale Mills is using ribs, cords, and crepe effects in its classic cotton constructions. The mill also emphasizes gold and green tones in its spring 1960 sportswear fabrics.

New textures are seen in shirt-weight fabrics. A plain sand crepe-type cotton mixes and matches identically textured fancies. Western-shirt plaids are also featured.

Ribbed fillings are used in shirt- and slack-weight fabrics. A new Pick-and-Rib denim, textured horizontally, is also used in slack-weight fabrics. Overchecked denim and dobby-striped chambrays and ginghams are used for men's and boys' sport shirts.

Topaz, grass green, Klondike gold, and Spanish moss appear in many fabric lines.

Spring Color Card

The Color Association of the United States, Inc., is distributing the first complete color card designed specifically for spring men's-wear styling and merchandise. "Seasoned Sun Colors" has been chosen as the theme for this spring 1960 card. In general, they are softened light tones.

The 7 featured colors and the 15 supplementary colors succeed the Burnished Tones, theme for the preview card issued for fall 1959.

Wash-and-Wear Cottons

In 1959, 4-billion yds., or about two-thirds of all cotton fabrics for apparel uses produced in the United States, are expected to be treated with wash-and-wear finishes. In 1955, 600-million yds. were given this treatment; in 1958, the total reached 2½-billion yds.

Speakers at the annual conference of Southern Agricultural Experiment Station Collaborators at the USDA's Southern Utilization Research & Development Div. gave the figures.

Adhesive-Finished Yarn

Du Pont Co. has developed a new adhesive-finished, high-tenacity rayon yarn for reinforcing mechanical rubber goods. The new yarn is called Super Cordura Type 272-F.

It can be processed on conventional industrial weaving equipment. Fabric dipping is not necessary to impart an adhesive quality.

Super Cordura Type 272-F has 40% greater retention of adhesion when wet as compared with conventional RFL-dipped rayon. It has higher yarn friction.

End-use fields foreseen include conveyor belting, wrapped and braided hose, and other in-rubber uses.

FIBERS YARNS FABRICS

Improved Knitting Yarn

J. P. Stevens & Co. has introduced an improved knitting yarn called Super Velvet Spun. It contains 50% Orlon, 40% Coloray, and 10% nylon.

Velvet Spun, which was developed by Stevens, has been improved by the addition of nylon to insure longer wear and increased knitting performance.

Super Velvet Spun has a cashmere-like softness and lightness. It is colorfast and has abrasion resistance. It is available in many colors.

U. S. Rubber's New Fibers

U. S. Rubber Co., Footwear & General Products Div., is now producing six types of polyethylene and polypropylene fibers.

Called Royalene, the fibers are produced for groups of end uses demanding special characteristics. They are offered in round, flat, oval, or ribbon shapes; in sizes ranging from six to 35 mils; and in six colors.

New Chromspun Color

Eastman Chemical Products, Inc., has added a new color, Pebble Beige 324, to its Chromspun acetate line. It is a warm, rosy-beige shade.

Acrilan Upholstery Fabrics

Holyoke Fabrics, Inc., has designed and produced a special collection of upholstery fabrics made of Acrilan.

A quality-construction standards program has been announced by Chemstrand listing minimum specifications required for Acrilan upholstery fabrics.

The program specifies that the face yarns of the fabric must be 100% Acrilan, whether they are warp or filling yarns. For other than face yarns, other fibers may be blended with Acrilan. However, the total fabric must not be less than 60% Acrilan by weight.

Lurex Beaming Program

Dow Chemical Co.'s Textile Fibers Dept. has started a new program to help customers obtain Lurex metallic yarns on beams.

The program enables mills to overcome low-sley limitations of the cotton-system slasher and permits manufacture of top beams for Lurex for two-beam work. It also reduces the need to work with skinny spools in the mills.

Customers may request the yarn shipped to a commission warper of their choice or may ask Dow to suggest a warper.

Mohair for Interiors

Mohair fabric is being featured in a new Burlington House Fabrics collection at the Design Center for Interiors in New York City.

Burlington's mohair fabric is available in white and pastel tones through vivid colors to deep tones. It comes in 50- and 51-in. widths.

New Wool-Dynel Fabrics

Hampshire Mills and Ware Mills have introduced 70%-wool and 30%-Dynel fabrics for women's and children's wear for fall.

The new fabrics, called Dynameau, are said to provide high strength, shrink resistance, and good retention of press. They have qualified for the No. 4 wash-and-wear rating, which certifies the fabrics to be machine washable, drip-dry, and need little or no ironing.

New Fibers Being Developed

American Viscose Corp. is working on new fibers to be used in two markets: dry, nonwoven fabrics, and fabrics formed on paper-making equipment.

One staple, named for its fibrillating properties, is in the research stage. The staple is processed to carry hooklike filaments that enable it to felt or mat together in the formation of fabrics and paperlike sheets.

Another new fiber is being developed that has increased bonding strength of one fiber to the next and in various combinations or blends.

New Typewriter Ribbon

Joseph Bancroft & Sons Co. and Remington Rand have jointly developed a crimped-weave (Ban-Lon) nylon typewriter ribbon claimed to have high ink absorbency. It is called Super Nylex.

Only the vertical yarn is crimped. The horizontal yarn is smooth. The crimping, the companies say, enables the ribbon to have a life up to 40% longer.

Lees's Carpet Promotion

James Lees & Sons Co. is offering its retailers a sales promotional package to introduce its newest 501 nylon carpet, Lasting Star.

The company offers a sales-training program, advertising aids, a publicity kit, and display material.

Esquire Enters Boys' Market

The Esquire Socks Div., Kayser-Roth Hosiery Co., Inc., will enter the boys' market this fall. Socks will include every important construction. They will be priced from 55¢ to 79¢ per pair retail.

NAHM Expands Work

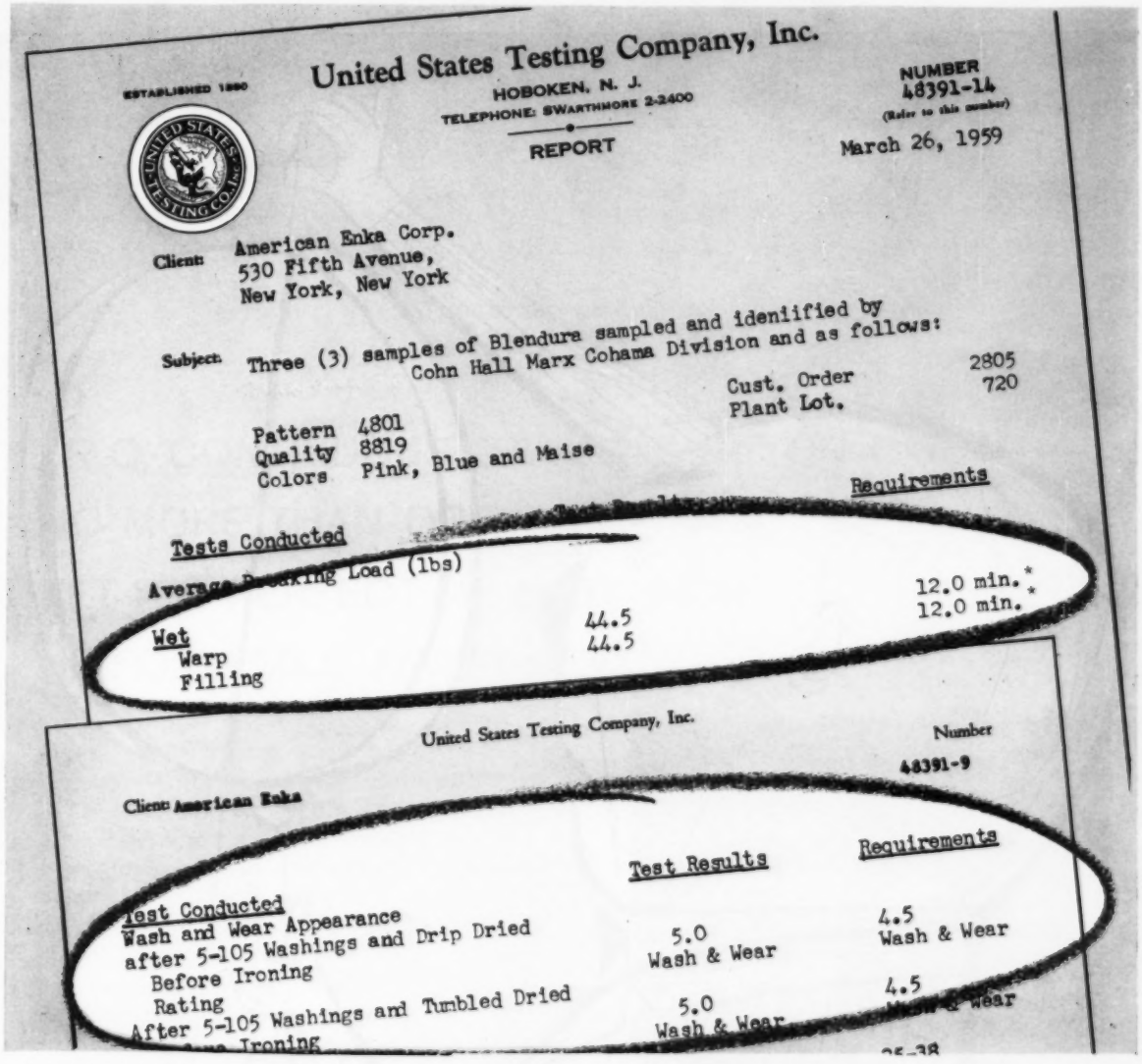
The National Association of Hosiery Manufacturers is now able to expand its consumer-protection work in the field of men's and children's socks.

This expansion is possible through the decision of Du Pont's Textile Fibers Dept. to include the Association's Seal of Approval in its fall advertising of men's and children's nylon socks.

The Association will expand its testing, approval, and enforcement activities. Du Pont will promote the seal in its consumer advertising. Manufacturers whose products meet the minimum standards determined by an independent testing laboratory are qualified to display the Seal of Approval on them.

BLENDURA*

The approved cotton-rayon blend for wash and wear



United States Testing Company, Inc.
ESTABLISHED 1880
HOBOKEN, N. J.
TELEPHONE: SWARTHMORE 2-2400
REPORT
NUMBER 48391-14
(Refer to this number)
March 26, 1959

Client: American Enka Corp.
530 Fifth Avenue,
New York, New York

Subject: Three (3) samples of Blendura sampled and identified by Cohn Hall Marx Cohama Division and as follows:
Cust. Order 2805
Plant Lot. 720
Pattern 4801
Quality 8819
Colors Pink, Blue and Maise

Tests Conducted		Requirements
Average Breaking Load (lbs)		
Wet		12.0 min.*
Warp	44.5	12.0 min.
Filling	44.5	

United States Testing Company, Inc.
Number 48391-9
Client: American Enka

Test Conducted	Test Results	Requirements
Wash and Wear Appearance after 5-105 Washings and Drip Dried Before Ironing	5.0 Wash & Wear	4.5 Wash & Wear
Rating After 5-105 Washings and Tumbled Dried Before Ironing	5.0 Wash & Wear	4.5 Wash & Wear

Here are recent independent test results—typical of the tests made on *every* finished run of Blendura cotton-rayon blends—on Cohama's Fall line of Blendura wash-and-wear, with little care, prints.

These tests, made by U. S. Testing Co., Inc., prove conclusively that Blendura cotton fabrics enriched with Enka rayon have superior wet filling strength and excellent wash-and-wear ratings.

Blendura is tested and approved by U. S. Testing. It is the *approved* cotton-rayon blend. Important Cohama customers, currently featuring Blendura prints, include such names as Jonathan Logan (high-fashion junior dresses), N. Farah & Sons (famous Loungee housecoats) and Rosenau Brothers, Inc., (Cinderella and Bonnie Blair dresses for children and sub-teens).

See for yourself. Let D. Crawford Smith show you Blendura's record of satisfaction for wash-and-wear without care. Call him at OXford 7-6141, Extension 35, or contact the Enka sales office nearest you.

SO MANY GOOD THINGS BEGIN WITH

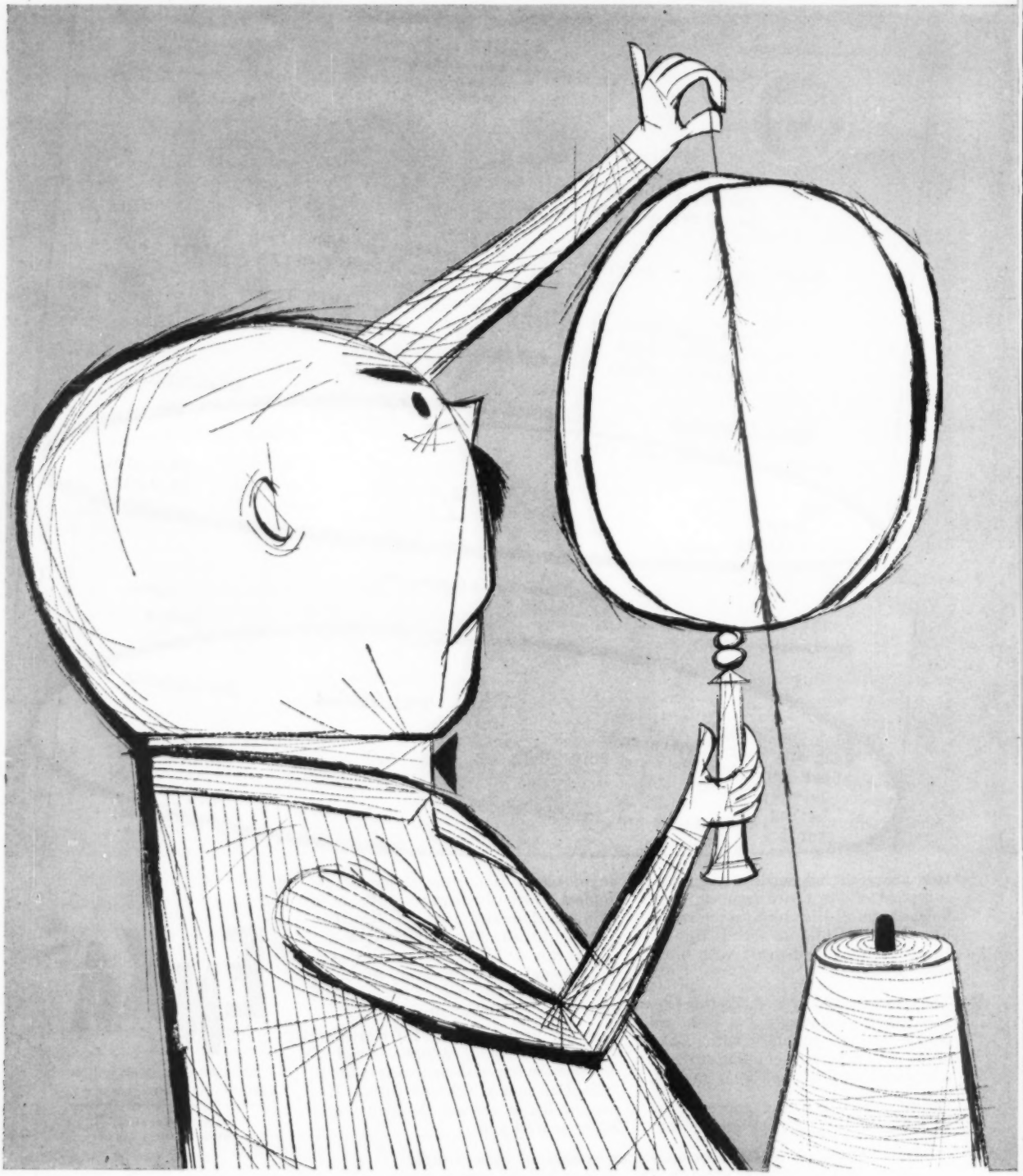
ENKA

AMERICAN ENKA CORPORATION
530 FIFTH AVENUE, NEW YORK 36, N.Y.
New York • Chattanooga • Greensboro • Providence

PRODUCERS OF RAYON
NYLON • YARNS • FIBER

Blendura is Enka's trademark for cotton-rayon blends certified by United States Testing Co., Inc., for blend level and performance.

how much do you pay for the



For more data, circle A-58 on Reader Service Card

flaws?

I.R.C. CONTINUOUS PROCESS RAYON COSTS NO MORE THAN ORDINARY YARN. YET IT'S PERFECT INCH BY INCH... UNIFORM MILE AFTER MILE!

What does it cost you every time you have to stop a loom because of flaws in your yarn?

This sort of thing can't be helped when you use rayon yarn made the ordinary way.

Ordinary yarn gets *handled* in production from stage to stage...gets picked up, put down, unwound, rewound, picked up and moved on again. This is what causes the broken filaments, the knots, and all the other damages that cut into your profits!

But, with I.R.C. Continuous Process rayon yarn it's different.

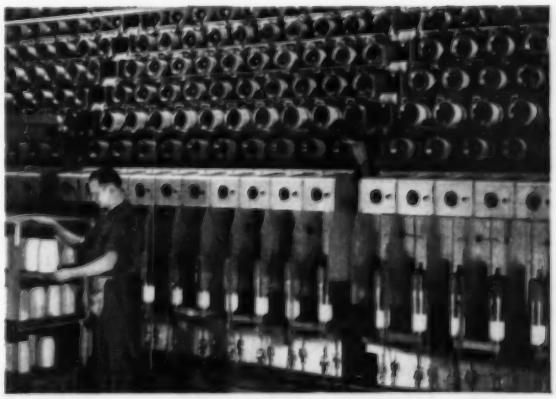
I.R.C.'s production process is *continuous*, just as the name says. *All* of the processes are part of *one continuous* vertical system, so that the yarn flows without interruption from spin-bath to a twisted package.

Nobody touches it.

Nobody damages it.

You get yarn that's as perfect and uniform as it's possible to produce.

You pay no more...and it saves you plenty!



I·R·C

Industrial Rayon Corporation
Cleveland, Ohio

660 Union Commerce Bldg., Cleveland 1, O.
500 Fifth Ave., N.Y. 36, N.Y.
627 Guilford Bldg., Greensboro, N. C.

Producers of Continuous Process Rayon Textile Filament Yarns. Tyrex* Cord and Fabric for Tires. Nylon Staple.
*Certification mark of Tyrex Inc. for viscose tire yarn & cord.

#3 in a series reviewing the "reasons-why" for the consumer acceptance of Arnel

ARNEL'S "STAMPS" OF CONSUMER APPROVAL

Mill men don't have to be sold on the importance of quality performance. It's woven into the business of textile manufacturing.

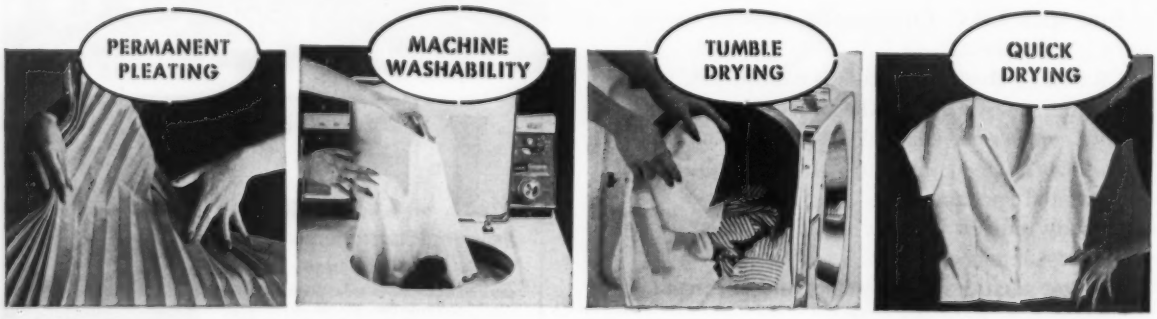
So too with consumers. They welcome the "quality assurance" implicit in proper fabric identification. Arnel tags, labels, folders and advertising are consumer assurances of performance claims—backed by thorough and consistent testing procedures.

What makes the Arnel triacetate CERTIFICATION program so meaningful to the consumer? Briefly, the answers are:

1. Fabrics identified with the official Arnel hang-tag, or supported by advertising or promotion must be tested beforehand.
2. These fabrics must meet the Celanese minimum requirements for: Fume Fading, Lightfastness, Colorfastness to Laundering, Tensile Strength, Tear Strength, Perspiration, Crocking, Seam Strength, Seam Efficiency, Safe Ironing Temperature, Ease-of-care and Dimensional Stability Characteristics, Abrasion, Pleatability.
3. In addition, dyers and finishers regularly send in samples of fabrics from their various dyelots, and these are also tested in order to make sure that the original quality is maintained in succeeding batches.
4. Arnel tags provide to the consumer all important information concerning the fabric as well as its care. Service qualities *must* be verified.

So take advantage of the great consumer acceptance of Arnel. Let Celanese work with you to develop new Arnel fabrics. Booklets 12A, 13A and 14A, containing the important technical procedure and facts about Arnel, are available by writing Celanese Corporation of America, Box 1414, Charlotte, N. C. Celanese® Arnel®

District Sales Offices: 180 Madison Ave., New York 16, N. Y.; Room 10-141 Merchandise Mart, Chicago 54, Ill.; Western Merchandise Mart, Room 478, San Francisco, Calif.; P. O. Box 1414, Charlotte 1, N. C.; 200 Boylston St., Chestnut Hill 67, Mass.; 3179 Maple Drive N. E., Atlanta 5, Ga.
Export Sales: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Ave., New York 16, N. Y.
In Canada: Chemcell Fibres Limited, 1600 Dorchester Street West, Montreal, Quebec



Arnel . . . a

For more data, circle A-59 on Reader Service Card→

ARNEL*

*This is the official Arnel symbol—evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

Celanese contemporary fiber

upholstery and drapery fabrics *look better* *sell better* touched with glittering...

FAIRTEX® YARNS

METALLIZED MYLAR* • METALLIC • SUPPORTED METALLIC

Fairtex with Foil or Metallized Mylar* or Fairtex Butyrate Metallic yarns woven into your upholstery and drapery fabrics add the luxury look!

They look better and sell better because the vibrant beauty of Fairtex Metallics stops the eye and starts the sale!

Fairtex Yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

As "soft-as-silk" to the touch, they are smooth, pliable and uniform and do not flake or break.

Fairtex Yarns never lose their glittering glamour and outlast even the fabric itself!

*Registered Trademark for Dupont's Polyester Film

2953

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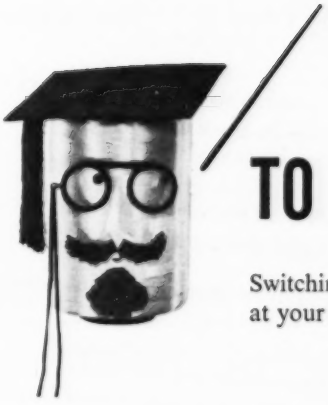
caprolan® THE NYLON FIBER BY ALLIED CHEMICAL

TEXTURED YARN SEMINAR

Courtesy American Lava Corporation, Chattanooga, Tennessee



GUIDE TO THREAD GUIDES

Switching to textured filament yarns? Take a look at your thread guides. Here's why:

Textured filament yarns and spun yarns are not the same

Textured filament yarns are *precision* yarns. Nicked or worn thread guides can cause considerable damage with these new yarns, and may result in streaks and filament breakage. So the best idea is to install satin-finished ceramic guides which have been especially developed for use with nylon filament yarns.

With a few simple adjustments such as this, you can avoid any problems in adapting Textured Caprolan to your product lines. Call our technical service, end-use development and fiber application laboratory staffs at any time for help in making such adjustments.

Fiber Sales & Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York 16, N. Y.

#9 of a series

For more data, circle A-61 on Reader Service Card

News about LUREX®

Perfect running mate for wool and they finish together

Two types of Lurex yarn are prescribed for use with wool.

Lurex MM (metallized polyester yarn), covered by Patent #2714569.
Lurex MF (polyester foil).

Both yarns show superior form in the finishing process so important in wool constructions, matching the wool fibers themselves in the excellence of their performance. In addition:

- Lurex adds dimension and luxury to wool fabrics. Lurex is the *soft, supple* metallic yarn fully compatible with the fine hand characteristic of wool.
- It opens up entirely new color concepts, through an ever-broadening range of colors and multi-colors.
- Lurex can be successfully extracted during the reclaiming operation, thanks to a recently developed method of handling. Ask your Lurex salesman for the full story on this.
- Lurex is non-tarnishing, can be safely subjected to dry-cleaning processes commonly used on wools.

See chart opposite, detailing the step-by-step procedure for wool and Lurex fabrics. For new styling and design ideas, get in touch with us direct.

Lurex, non-tarnishing metallic yarn made only by the Textile Fibers Department of

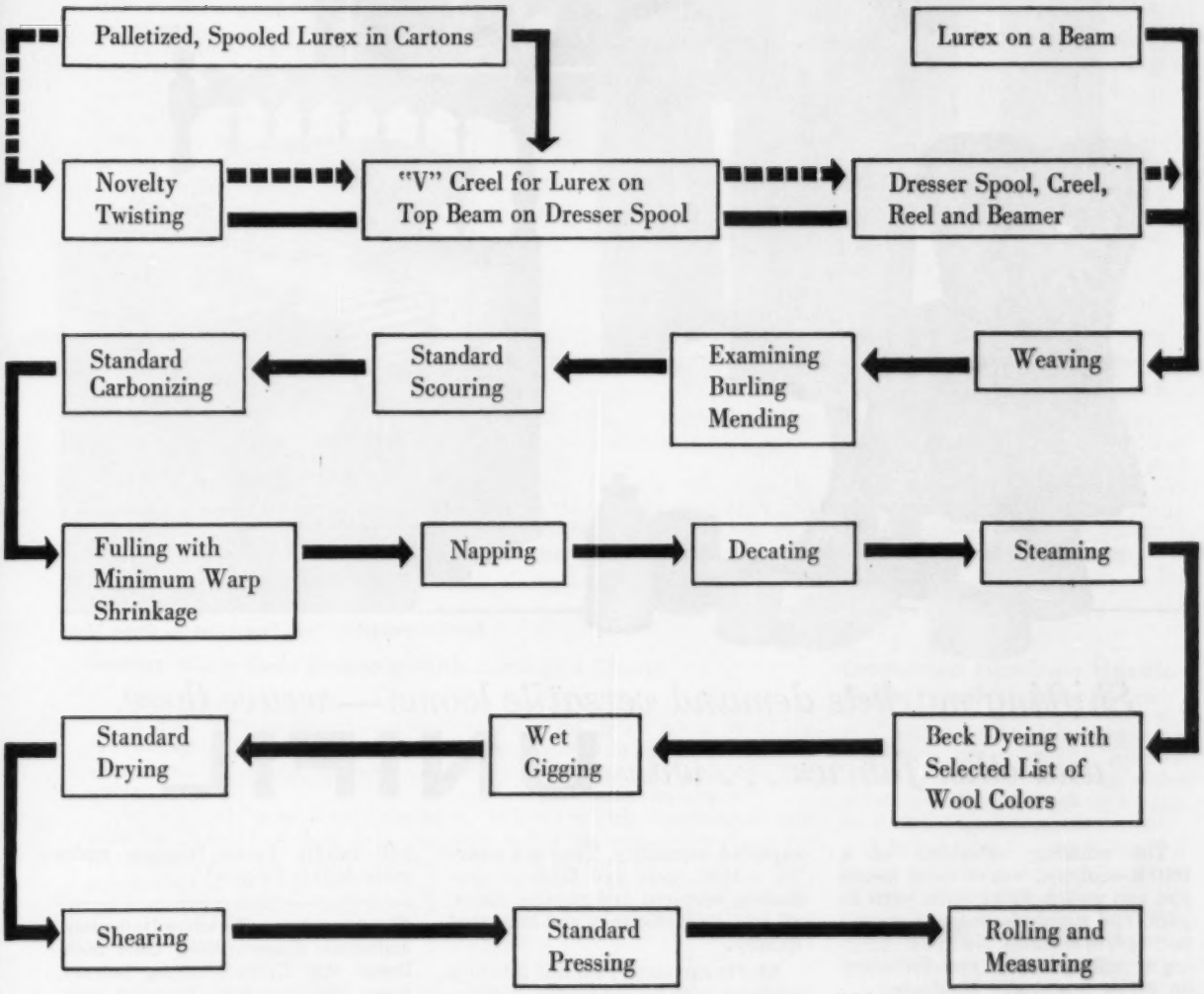
DOW

The Dow Chemical Company • ***Williamsburg, Virginia*** • ***New York: 350 Fifth Avenue***

Boston • Camden, N. J. • Charlotte, N. C. • San Francisco

Manufacturing Affiliates in Canada: William B. Stewart & Sons, Ltd., Toronto and Montreal

Typical flow chart for woolen mills using LUREX MM LUREX MF



Finishing Routing Symbolized For a Piece Dyed Broadcloth With Certain Minor Operations Omitted

Furniture courtesy of John H. Pray & Sons Co., Boston, Mass.

Shifting markets demand versatile looms — weave these, and other fabrics . . . with UNIFIL®

The amazing versatility of a UNIFIL-equipped weave room means you can switch filling from yarn to yarn, and supply package to supply package, in minutes. No more changing in quilling room . . . yarn inventory on quills practically eliminated . . . minimum work load adjustments.

Mills are proving every day that their UNIFIL-equipped looms have unexpected versatility. They are weaving cotton, spun and filament synthetics, textured and novelty yarns, all with high efficiency and improved quality.

UNIFIL can move your mill into new markets, with higher profits, quickly. *The versatile weave room is the* UNIFIL-*equipped weave room.* Your neighbors* have discovered it . . . when will UNIFIL Loom Winders make more dollars for you?

* Amerotron, Berkshire-Hathaway, Burlington, Cannon Mills, Cone Mills, Dover Mill Group, Judson, Laurens, Pansy Weaving Mills, Ponemah Mills, Riegel Textile, Stanwood Mills, J. P. Stevens, United Merchants, Woodside Mills. (A partial list, only.)

23.8.8A

UNIVERSAL WINDING COMPANY

For more data, circle A-63 on Reader Service Card

Small Board With Clips Helps Match Fabric Patterns

In copying designs for woolen and worsted men's wear in different shades, it's necessary to have warp stripes in all shades the same depth of color. The stripe in any given fabric should be as prominent or as subdued as the stripe of any other identical pattern.

The common practice in checking these patterns is to use a large board covered with a black cloth and set at an angle of approximately 63°.

An easier way to do this same job is with the small hardwood board shown in the sketch. The board is 5¼ ins. long and 2 ins. wide. Two pieces of spring from an old clock are bent as shown and screwed to each side of the board.

Approximately ¼ in. of ground-warp yarn of the original pattern is clipped under the inside spring on each side of the board. Then ¼ in. of the new yarn is placed under the two outside springs.

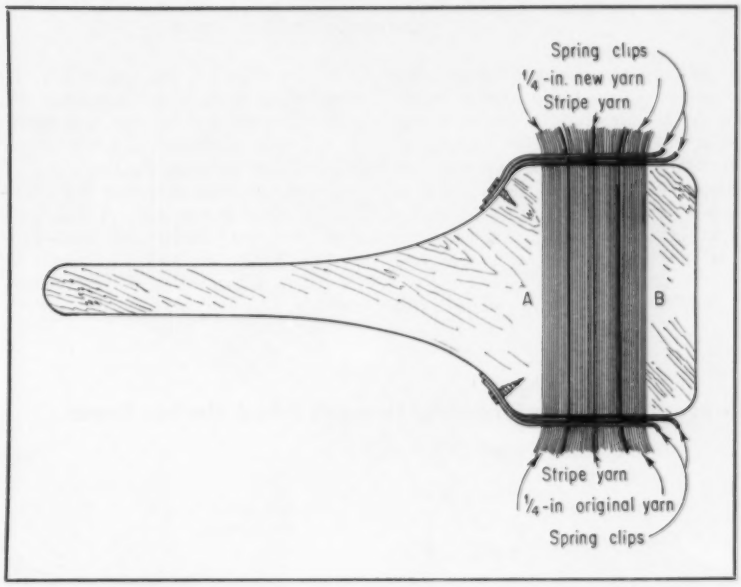
Each of these sections of yarn is followed by a sample of striped yarn from each warp. Then both sections of striped yarn are followed by a second ¼-in. piece of ground warp.

The yarn under the outside springs can be changed to match the inside yarn as needed without disturbing the original yarn.

You can intensify the shade by pinching the yarn together at *A* and *B* to make it more dense. And at a quick glance, you can determine if one stripe is brighter than another.

In addition, when you change from one weave to another, say a 2/1 twill to a 2/2 twill, you get a good idea of the strength of the stripe by changing the tension on the yarn. (K-4037)

Bruce Jackson, Brantford, Ont.



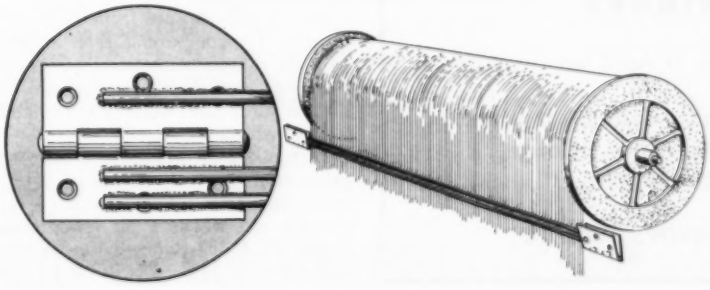
Fasten Warp Ends Securely With a Hinged Clamp

When a loose sheet of warp ends is to be held temporarily in positions such as in tying-in-machine operations, a homemade hinged clamp does an excellent job.

Use two butt hinges 3 ins. long to make the clamp. Cut three ⅜-in.-dia. round steel rods 7 ins. longer than the widest sheet of warp you need to hold.

Then weld one of the rods about 1 in. from the edge of each hinge as shown in the sketch insert. Weld the other two rods to the other wings of the hinges so that they center the first rod when the hinges are closed.

When the rods are clamped over the end of the warp sheet, the spring action of the steel rods holds the warp ends securely. The clamp is released by pulling the hinges open. (K-4081)



Leather on Handsaw Handle Holds Pencil in Easy Reach

Almost every cut with a handsaw is made at a pencil mark. Carpenters usually keep a pencil in the leg pocket of their overalls, but they have to reach for it each time they use it.

A better place to keep a pencil is on the saw handle. Cut a strip of thin leather 3 ins. long and 1 in. wide. Use a belt punch to punch a hole near each corner of the leather, and punch another hole at one end.

Place the leather on one side of your saw handle at a 30° angle with the end hole down and the rough surface of the leather outward. Use two small wood screws to screw the leather to the saw handle. Then turn the leather over so that the polished side is outward, and put screws in the other three holes. Your pencil will fit snugly in the holder, and it will always be at hand. (K-3385)

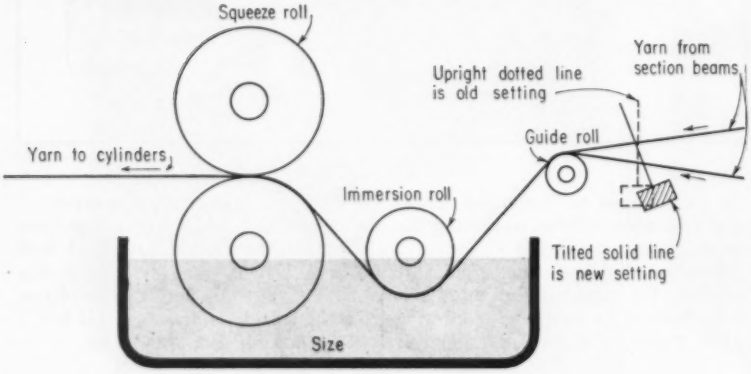
Two Alligator Clips Check Electrical Leads

Mill electricians and instrument service men have to do a lot of checking with ammeters, voltmeters, and other testing instruments. These instruments have various types of terminal ends on their leads such as closed end, open end, plug-in for jacks, etc. As a result, much time is used in putting on and removing these connections.

But by joining two alligator-clip couplings together, you can fit any of these leads quickly to any kind of cable. Flatten the bottom butt ends of the two ordinary alligator clips. Solder these surfaces together.

Then you can test any lead by simply clipping one end of the two clips to your instrument and the second end to your lead to be checked. (K-3518) *Charles H. Willey, Penacook, N. H.*

Rayon Warps Run Smoothly Through Tilted Slasher Comb



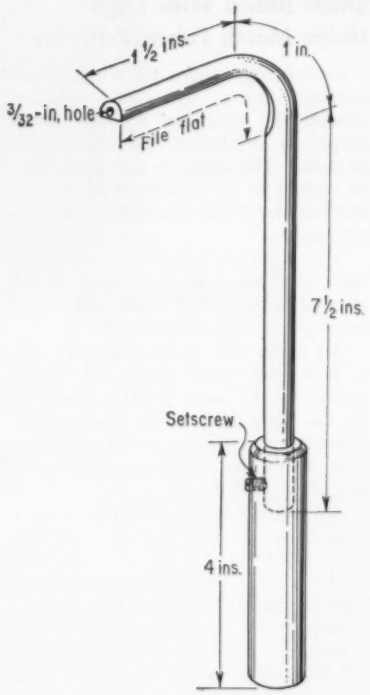
Size box

For sizing rayon warps at slashers, we use a comb at the front of the guide rolls to separate yarn ends. The comb has a ⅛-in. pitch and 5-in.-length pin.

We formerly set this comb upright, as shown by the dotted line in the sketch; but it often clogged with yarn neps, and consequently trouble developed in slashing and in weaving.

We changed the upright position of the comb to the angle shown by the black line in the sketch. Now yarns run through the comb smoothly. (K-104) *Hokao, Fukaya, Fukui-ken, Japan*

Gauge Makes It Easy To Set Traveler Cleaners



It can be quite a job to set traveler cleaners; and to make the work easier I built a gauge as shown in the sketch.

The tool is made of ¼-in. cold-rolled steel bent in the shape shown so that the operator can reach around the bobbin without breaking down any ends. The gauge is particularly useful for large-package spinning where separators are used.

A hole large enough to fit the traveler cleaner is drilled in the end of the steel rod. A 3/32-in. hole will do for most cleaners. Then the rod is filed off flat on the side that comes in contact with the ring. The amount filed off depends on the yarn number and traveler used.

In our mill we spin from 2s to 49s yarn; so I made several tools to use with the different-size travelers. These tools, easy and cheap to make, can be slipped into the same handle and secured with a setscrew.

In our plant, one man is able to gauge from 8 to 10 frames in 8 hrs. with this tool. The travelers stay cleaner, and we have far fewer ends down. (K-4073) *Ralph Barnes, Yatesville, Ga.*

$25 KINK WINNER

The $25 prize for the best kink in April was won by:

Albert Menard, Montreal Cottons Ltd., Valleyfield, Que., for his Kink "Gauge Indicates Correct Ring-Rail Position."

WATCH FOR NEXT MONTH'S WINNER

Keep your spindles running clean and trouble-free with Gulfspin . . .

GULF MAKES THINGS RUN BETTER!

Do your spindles run smoothly year after year? If not, chances are you can save time and money by switching to Gulfspin—the oil that helps you cut costs 3 ways.

1. You save cleaning costs with Gulfspin—because its high oxidation stability resists the formation and deposit of sludge, gum, resin and rust. You don't have to pump your spindle bases as often. In some mills, spindles have run clean and trouble-free for more than ten years with Gulfspin.

2. You save power costs with Gulfspin—because it does not increase in viscosity even after long service. Spindles run easier. And starting torque is reduced.

3. You save maintenance costs with Gulfspin—because it has the load-carrying ability to keep spindles running smoothly—longer. Gulfspin gives spindles an extra margin of protection against high temperatures and excessive wear.

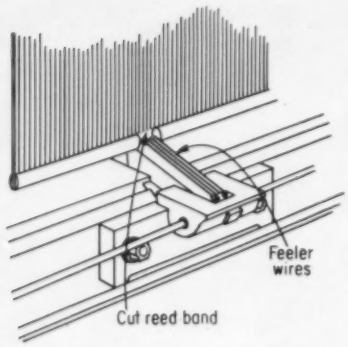
See how Gulf makes things run better! For information on the right grade of Gulfspin for your specific needs, contact a Gulf Sales Engineer at your nearest Gulf office, or write for Gulfspin folder.

GULF

GULF OIL CORPORATION • Dept. DM, Gulf Building • Pittsburgh 30, Pa.

Extend Feeler-Wire Blades To Reduce False Loom Stops

On looms with center-fork filling stop motions, high-twist or otherwise lively yarns often make false stops or lay off.



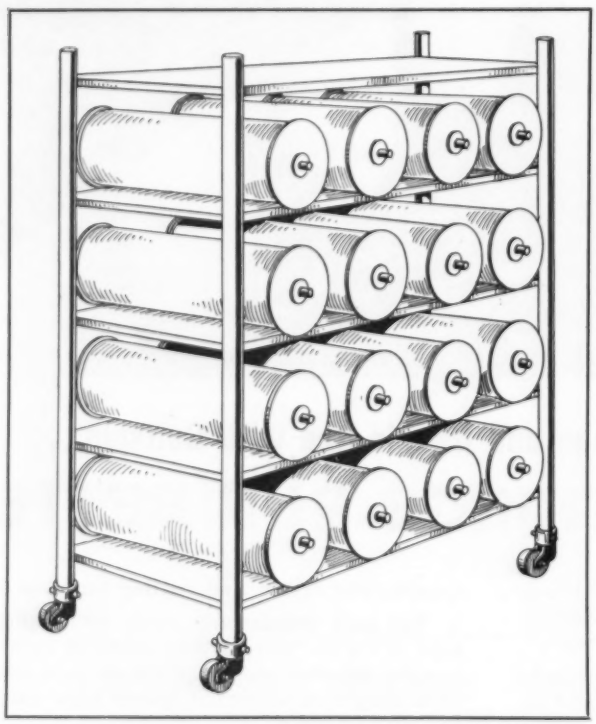
Laying off can be reduced greatly and sometimes eliminated if you extend the stop-motion feeler wires so that they stay on the filling longer.

To extend the feeler wires an appreciable amount, you will have to cut a section out of the bottom metal cap of the reed. An all-steel reed is easy to alter without weakening it.

But cut only a small section; usually 1 to 1½ ins. in length is enough to clear the feeler wires.

This cap section of the reed slides off easily, and the cutting can be done even with a warp in the loom. But be careful to cut only the front section. (K-3841) *David L. Garrett, South Boston, Va.*

Portable Beam Rack Reduces Handling Time



We formerly stacked loom beams on a stationary rack. When the beams were needed, they were lifted off the rack to a truck for removal to another part of the room. Handling the beams was hard work and time consuming.

We cut out this extra work by putting heavy-duty casters on the rack and pushing it loaded to the point needed. The casters are removable when there is some reason for converting the rack back to a stationary type. (K-3943)

Waste Is Removed By Fast-Turning Spindle

We used to pull soiled or poorly wound yarn off bobbins by hand, which is a slow and tedious process. The job is now done with a rapidly turning spindle mounted on one end of our spooler. The waste not only comes off rapidly; it also automatically classifies itself in the process and does not get mixed with other kinds of waste. (K-102) *Beaumont Div., Spartan Mills, Spartanburg, S. C.*

Broken Taps Can Be Removed With an Open-End Wrench

Removing broken taps, bolts, and screws from a machine is usually a difficult job. An easy-out can be used for some screws and bolts, but taps are too hard to bore.

A better way to remove a broken tap is to drive a small steel rod down each flute of the tap. Then cut a small square iron plate big enough to cover the tops of the steel rods. Make the plate to fit one end of an open-end wrench.

Drill a hole in the iron plate for each piece of steel rod so that the plate can be used down over the rods. Place your open-end wrench around the plate and turn the wrench counterclockwise just as you would remove a nut. The broken tap will come out as you turn the wrench.

To remove screws and bolts, use a center punch to punch four starting holes around the screw or bolt. Then bore small holes in the screw.

Put steel rods in the holes and remove them just as in removing broken taps. (K-3501) *W. E. Warner, Essex, England*

Solve Your Adjustable Speed Problems with this Combination

EATON
DYNAMATIC®
DIVISION
EATON MANUFACTURING COMPANY
KENOSHA · WISCONSIN

*

AJUSTO-SPEDE®

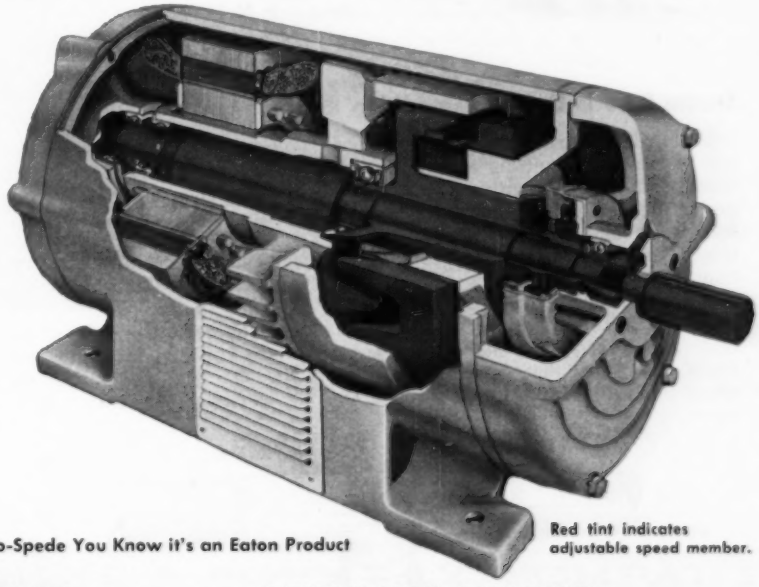
If your problem is in the field of speed control, tension control, power transmission, or testing, Dynamatic Eddy-Current Equipment is the ideal solution. Dynamatic Ajusto-Spede Drives, Couplings, Brakes, and Dynamometers are solving these problems in virtually every industry—in both plant machinery and end product applications. Dynamatic equipment can do the same for you.

Ajusto-Spede Drives and other Dynamatic units offer the important advantages of rapid response, wide speed range, quiet operation, low power loss, low maintenance costs, and stepless adjustable speeds from an AC power source.

For complete information about Dynamatic problem-solving equipment, check with your local Eaton-Dynamatic representative or distributor.

The New Quill-Type Ajusto-Spede Drive provides controlled adjustable speeds for applications from ½ HP through 7½ HP. Together with the new K-2 Electronic Control and push-button station, this new Ajusto-Spede Drive comprises a compact, low-cost, 3-unit drive package.

Send for Illustrated Descriptive Literature Covering New Models ACM-903 and 904 Ajusto-Spede Drives



Red tint indicates adjustable speed member.

EATON®

***When You See the Name Ajusto-Spede You Know it's an Eaton Product**

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MANUFACTURING COMPANY
3307 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

PIONEER IN EDDY-CURRENT EQUIPMENT

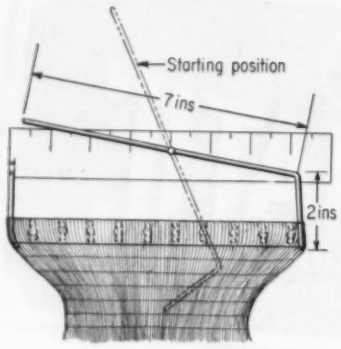
For more data, circle A-65 on Reader Service Card

Ruler and Wire Quickly Measure Sock Stretch

Correct stretch is a must for a sock top. You can assure correct stretch and measure it faster by making a simple tool from a ruler and a piece of 0.625-in. wire.

A 2½-in. piece of wire is fastened to one end of the ruler as shown, and a 9-in. piece is bent and bolted in the middle so that it swings free.

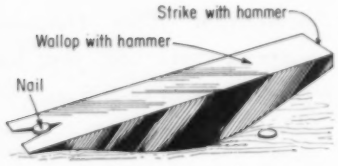
Stick the two ends of wire in the stock, and squeeze down on the upper end of the wire. Length of wire is determined by standard stretch desired. (K-3901) *H. J. Haas, Martinsburg, W. Va.*



Wedge-Shape Notched Tool Lifts Nails and Pulls Them

In putting down new pieces of flooring in an old flooring where common nails are used, it's often hard to remove the nails with a crowbar. Instead of trying to use a crowbar, we now use a nail puller we made ourselves.

A piece of steel is machined as shown in the accompanying sketch. Then it is tempered to make it rugged.



To use the tool, the sharp prongs are positioned to straddle the nail to be pulled. Then a sharp blow with a 2-lb. hammer at the butt of the tool lifts the nail and secures it in the v-notch of the tool.

Another downward wallop with the hammer pulls the nail completely out of the flooring.

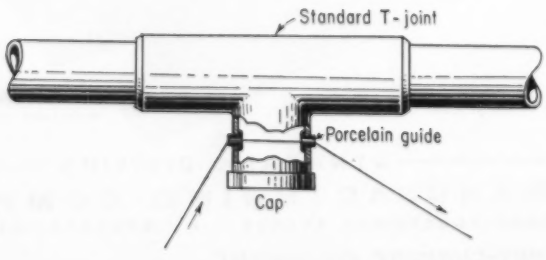
Spikes can also be pulled with the same type of tool made to larger dimensions. A much heavier hammer is needed. (K-3616) *Charles H. Willey, Penacook, N. H.*

Steam Pipe Is Used To Condition Knitting Yarn

We used to have trouble with dried-out yarn at our knitting machines. This condition was particularly bad during the hot summer months. Our storage warehouse was not air conditioned, and we didn't have a conditioning room.

But we did have some steam pipes near the knitting machines that carried low-temperature vacuum-vapor steam. We found that we could condition our yarn very nicely at practically no extra cost by inserting a series of T-joints in the steam pipe over each machine and running the yarn through the nipple as shown. Small holes were tapped into the nipple, and porcelain guides were inserted. Very little steam is lost because of its low pressure and temperature.

This arrangement has stopped our yarn from kinking, breaking, and producing excessive fly during the knitting operation. (K-3820)



How To Figure Winder Production Speed

The production speed of a drum winder cannot be obtained directly from its drum-surface speed because of the slippage between the package and the drum and because of the helical method of winding on the package. Slippage is greatest when the package is small, and it gradually decreases as the package builds up.

Here's a quick and accurate method of measuring the production speed of these winders:

Measure on a yarn reel the length of yarn of a double traverse from a bobbin in the creel, one upstroke and one downstroke. The number of double traverses the winder takes up in a given time can be counted visually or by feel with a light touch of the finger at the bottom of the warp-wind traverse. The only instrument required is a watch with a second hand for timing.

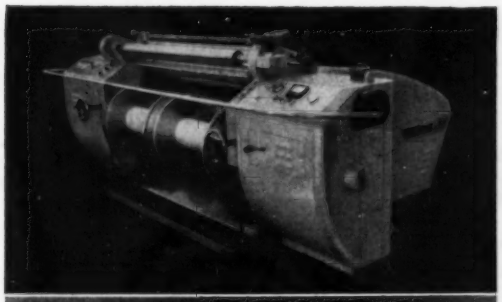
This method is possible because the cam of the traverse motion on a spinning frame is in the same train of gears as the front delivery roll. This means that the length of yarn delivered to the bobbin for each revolution of the builder-motion cam is the same throughout the doff, and each revolution of the cam makes a double traverse. Only a change in the gearing for wraps per inch on the spinning bobbin or a different length of traverse will alter the length of yarn per traverse.

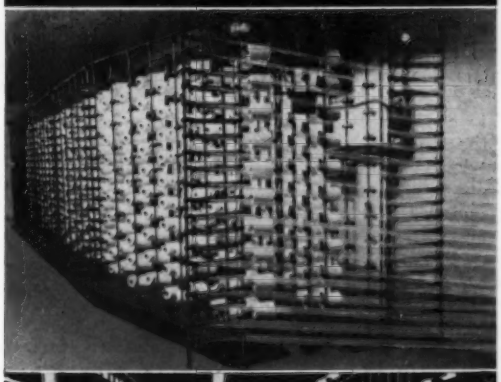
The length of yarn in a double traverse and the number of traverses the winder takes up in a given time can be converted to yards-per-minute production. Accurate production speed for any kind of package can be figured by taking two timings of double traverses, one at the start of the package and another when the package is nearly full. (K-4092)

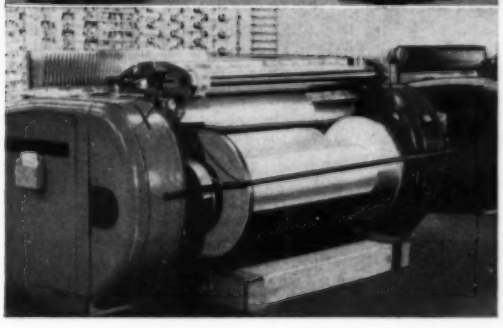
Pen Light on Screwdriver Makes Dark Jobs Easier

Working in dark places on a knitting machine can be very irritating at times. In many instances work is prolonged because lack of light makes it difficult to handle small screws in take-ups and in other hidden parts.

A pen light secured to the shank of your screwdriver with tape will do an excellent job in illuminating those difficult, dark spots and cut your working time to a minimum. (K-3694)







THE UNBEATABLE COMBINATION

...used by more yarn producers than any other

Leading mills everywhere rely on this equipment because of its speed, high quality production, versatility, convenience, and economy.

Cocker Tricot Warper Model MB 55-32 (Top Photo)
Handles 2-21", 1-42", 1-55" Beams, or 1-50" or 2-25" Raschel beam with simple changeover from one set to another. Individual controls, in full view and easy reach of operator. Has all modern features and safety devices. Normal sustained speeds up to 600 YPM.

Cocker Horizontal Type Magazine Cone Creels (Second Photo)
Standard creel is built to take four pound packages but can be built to take larger packages. Takes any type package. Cone holders are arranged to swing around inside the "V" for re-creeling without interfering with the operation of the machine. Equipped with electronic eyeboard stop motion. A wide range of tensions is available.

Cocker Vertical Type Magazine Cone Creel (Third Photo)
Available in true vertical or magazine . . . equipped for any type package. Tensions are new improved type with adjustable posts for varying tensions in the yarn. Tensions can be run on light yarns without washers, or washers can be used on one or both posts when yarn requires it. Electronic stop motion available.

Cocker High Speed Spindle Driven Warper (SD-49) (Bottom Photo)
Will handle any type yarn. Produces unexcelled synthetic warps from finest deniers to heaviest tire cord yarns. Takes section beams with flanges up to 40" dia. Produces warps of any desired density at speeds up to 1000 YPM.

Write for full information today.

COCKER MACHINE & FOUNDRY COMPANY

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at Ranlo, N. C.
MAILING ADDRESS
Gastonia, N. C.

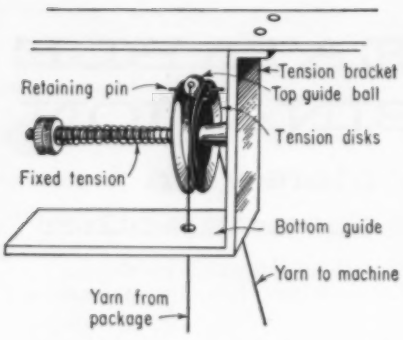
WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Make Your Own Tension Compensators

We used to have considerable damage and seconds caused by variation of tension when badly wound cones were used on our circular machines.

Although as a rule we check our tensions periodically during shifts, there still were times when an end got tight and dragged so that lines were made in the goods.

We knew the answer to our problem was to install tension compensators on our machines, but the management found this to be a rather costly proposition. So we decided to make our own tension compensators. Here's how to do it:



Place a small steel ball to conform with the taper on top of the tension disks in which an up-and-down traverse retaining pin is provided to hold the ball in place. If an irregular place occurs in the yarn and causes it to drag from the package, the steel ball is pulled downward as shown and the tension disks are separated momentarily as the extra tension is removed. (K-3791)

Wheel Guards Protect Bobbins From Damage

In our carding and spinning departments, we frequently find full and empty bobbins that have been crushed and mangled by casters on the numerous trucks that are pushed about in the room.

We stopped this waste by making V-shape guards that fit over the wheels and knock the bobbins and quills to one side. The saving has been surprisingly large. (K-4089) *I. J. Abraham, Warangal, India*

Special Tool Protects Gears For Loom Take-up Motion

Many pick wheels and change gears in the spur-gear take-up of Draper looms are broken when the pinions are knocked off, and lots of gears are battered so that the studs bind and cause thick and thin places in the fabric.

We've eliminated this trouble by making a knockout tool for each loom-fixer. The tool is made from a short piece of round steel stock with a diameter the same size of the hole in the change gear.

One end of the stock is turned down in a lathe to the size of the change-gear stud. This tool fits the pinion, and the pinion is knocked out easily when the tool is tapped with a hammer. (K-3836) *Grady Turner, Clinton, S. C.*

Determine Loom Production Quickly With This Table

We recently developed a new method of calculating loom production in yards at our mill that's very quick. It also gives accurate results. The accompanying table is the basis of the method.

Production Factors

Expected efficiency	40-hr. loom	120-hr. loom	144-hr. loom
85%	56.67	170	204.0
86	57.33	172	206.4
87	58.00	174	208.8
88	58.67	176	211.2
89	59.33	178	213.6
90	60.00	180	216.0
91	60.67	182	218.4
92	61.33	184	220.8
93	62.00	186	223.2
94	*62.67	188	225.6
95	63.33	190	228.0
96	64.00	192	230.4
97	64.67	194	232.8
98	65.33	196	235.2

Each production factor in the table is obtained by first multiplying the number of minutes in the loom week by the loom-efficiency percentage you expect. Then this number is divided by 36 (inches in one yard).

An example is: $2{,}400 \times 94 = 225{,}600 \div 36 = 62.67$.

Then to determine the yards to be woven on any given loom, you select a production factor from the table and multiply this factor by the loom speed in picks per minute. Next you divide this number by the picks per inch in the fabric.

An example of 76-ppi. construction, 160 ppm., 94% expected efficiency is: $62.67 \times 160 \div 76 = 131.9$ yds. for 40 hrs. (K-4071)

$500 FOR BEST KINK IN 1959

$25 for Best Kink Each Month—Plus $5 to $10 for Every Kink Accepted

A KINK . . . is any idea that will cut costs, improve quality, reduce work, increase production, or make work easier.

You can send in as many Kinks as you want to any month.

All Kinks are paid for on acceptance.

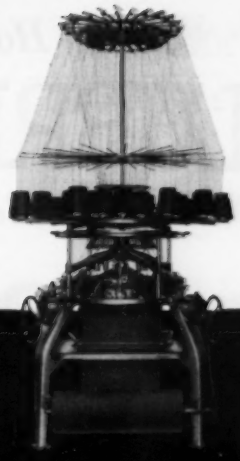
Previously published Kinks not eligible for prizes. Let us know if you don't want your name published.

Price winners are selected by TEXTILE WORLD readers. At least 300 will be asked each month to vote on the best Kink that month. In case of ties, duplicate prizes will be paid.

Send Kinks to:
Kinks Contest, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

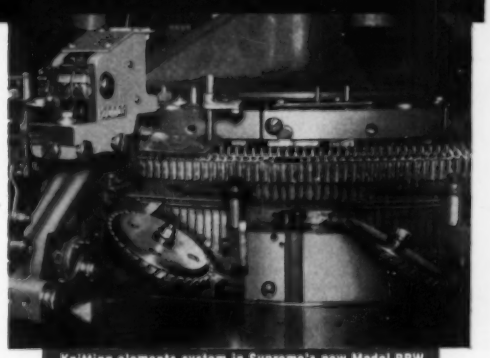
SUPREME BRW

Knits Up To 100 Yards Per Hour!

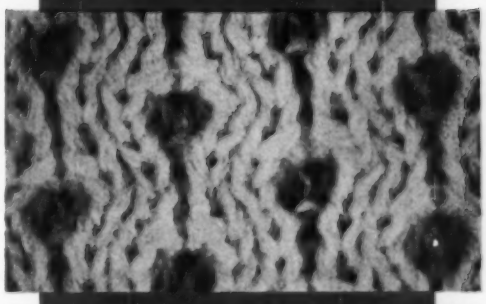


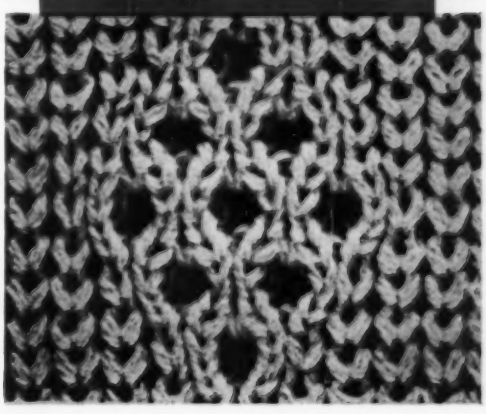
BULKY SWEATER FABRICS

- **PATTERN WHEELS ON ALL FEEDS AND STRIPING BOXES ON ALTERNATE FEEDS GIVE YOU UNPRECEDENTED BULKY KNITTING FLEXIBILITY at 5 to 20 times the output of previous models.**
- Knits 1 x 1 Rib and Half Cardigan bulky sweater and outerwear strips . . . in an infinite variety of Multi-Color Designs, Self-Patterns, Solids, Automatic Variable Stripes, Textures and Combinations . . . maximum production rate of 1 strip per minute — 100 yards per hour.
- Standard 30" diameter machine has from 3 to 7 cut cylinders and dials — 16 feeds with 4 color striping boxes on alternate feeds — (Each of the 8 boxes is individually and automatically controlled for maximum selection without production loss) — Pattern wheels on all 16 cylinder feeds — Automatic tuck controls on all 16 cylinder and dial feeds permit automatic switch from half cardigan to 1 x 1 cuff stitch.
- Produces body and sleeve strips with attached trims and ***easy, clean-selvage draw thread separations.*** Unique method eliminates welt, resulting in yarn savings and cloth more suitable for brushing.
- Independent tight and loose controls give desired structure and elasticity on body as well as cuff or waist.
- Handles up to 3 ends of 2/18 W.C. yarn. Has revolving yarn stand ***with stationary, rubber-covered take-up.***
- **For a look at the BRW in action — contact Supreme today or Morris Kaplan Co., Exclusive Sales Agent To The Sweater Trade, 932 Madison Street, Brooklyn, N. Y.**



Knitting elements system in Supreme's new Model BRW has easy-to-set pattern wheels and striping boxes





SUPREME
KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
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BK-193

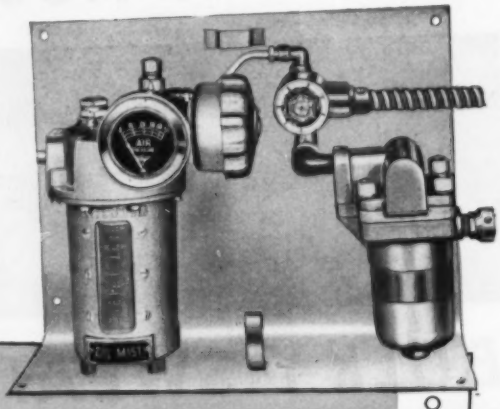
For more data, circle A-67 on Reader Service Card

How to choose a

LUBRICATION SYSTEM

that provides constant, uniform lubrication

at savings of up to **90%**



use this handy check list:

Will your lubrication system be fully automatic? Oil-Mist starts and stops at the touch of your machine switch.	**Will the system that you choose cut oil consumption by 90%?** With the Alemite Oil-Mist System you can get better bearing lubrication with only 1/10th as much oil as required by other methods.
Will your lubrication system reduce bearing temperatures? The answer is "yes," if it's an Alemite Oil-Mist System. Reduction in fluid oil friction—plus air flow through bearing—greatly cuts bearing heat.	**Will your system extend bearing life?** You can definitely count on it, if you choose Oil-Mist. Oil-Mist has extended the service life of many bearings, even under adverse operating conditions, from 10 to 12 times!
Will you have a continuous system? Oil-Mist constantly feeds a uniform volume of fresh oil to each bearing. No oiling schedules. No feast-or-famine lubrication.	**Does it protect against contamination?** Satisfied Oil-Mist users say yes. A constant flow of clean, air-oil mixture—Oil-Mist—through bearings keeps out dirt and abrasives. Oil-Mist also eliminates wasteful oil handling and applying.

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Oil-Mist for high speed anti-friction type of bearings.

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Condensed Oil for plain bearings, slides, ways, vees, cams, and rollers.

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☐ Please have your Alemite Lubrication Representative arrange a no-obligation demonstration.

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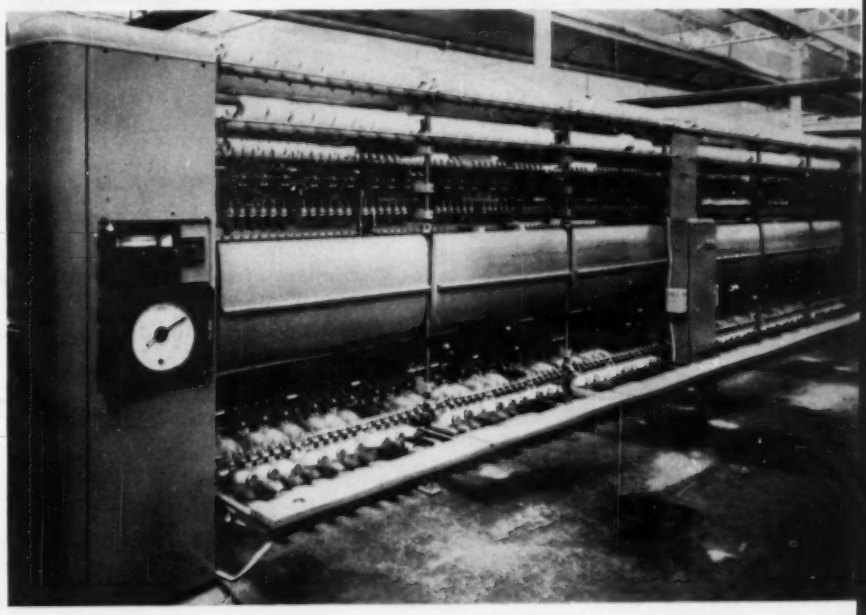
For more data, circle A-68 on Reader Service Card

SHOWN AT KNITTING ARTS EXHIBITION

Textured-Yarn Machine

A false-twist machine that produces high-quality torque-type textured yarn was shown by Whitin Machine Works, Whitinsville, Mass.

The manufacturer of the machine, Ateliers Roannais de Constructions Textiles, Roanne, France, has granted Deering Milliken Research Corp., Spartanburg, S. C., the exclusive right to license users of the process in the United States, Canada, and Mexico. The grant to Whitin gives exclusive rights to manufacture and sell the machine in these three countries.



The machine produces textured filament yarn by inserting false twist in the filaments and heat-setting them while they are in the crimped condition before release of the false twist. Equipped with extra-long contact heater tubes with individual thermal control, the twister provides maximum temperature uniformity control.

Control of shrinkage in the false-twist zone is secured by positive yarn feed to and removal from the heating and twisting elements. Yarn slippage is eliminated by rubber aprons that hold the yarn in contact with the feed rolls.

Circle T-1 On Reader-Service Card

Warp Yarn Monitors

Two warp-yarn monitors, called Dual Purpose and Linear Discriminator, were shown by Fabrionics Corp., Huntington, L. I. Both machines perform the same as the regular warp-yarn monitor [TEXTILE WORLD, May '59, p. 155] but have special features.

The Dual-Purpose machine counts all defects at a preselected level and causes the warper to stop at a second preselected level. This action is made possible by two separate control units operating off the same photo-detection system.

When a quantitative analysis of all defects is required, the machine can be set so that all defects are counted but only objectionable defects stop the warper.

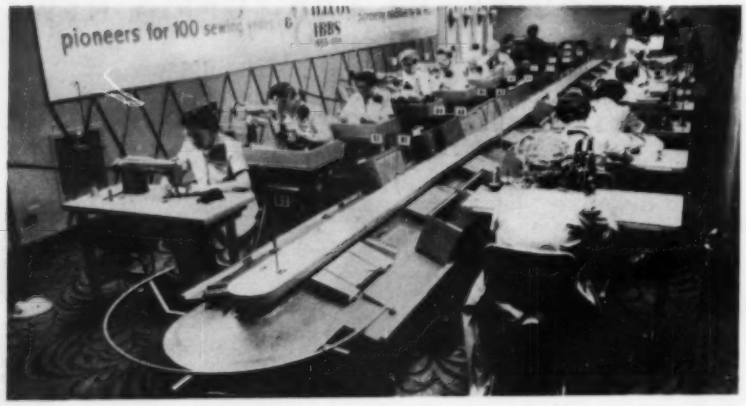
The Linear-Discriminator monitor differentiates linear defects up to 3 or 4 ins. in length as well as changes in diameter of a defect.

Circle T-2 on Reader-Service Card

Hosiery Clipping Machine

A thread-clipping machine, Model A 4-600-2, was shown by Somerset Knitting, Inc., Machinery Div., Plessiville, Que. Sales and service agent is H. E. Crawford Mill Supply Co., 825 S. Main St., High Point, N. C. The machine is designed to trim, inspect, and turn hosiery automatically.

Circle T-3 on Reader-Service Card



Transportation System

The Pfaff Varion transportation system was featured in a plant-style exhibit of garment manufacturing sponsored by Willcox & Gibbs Sewing Machine Co., 214 W. 39th St., New York 18, N. Y.

A new three-thread Willcox & Gibbs superlock machine, Model 813-C-15-1, headed up a series of sewing operations on knitted underwear, dresses, and gowns. Other Willcox & Gibbs and Pfaff sewing machines were also featured.

Circle T-4 on Reader-Service Card

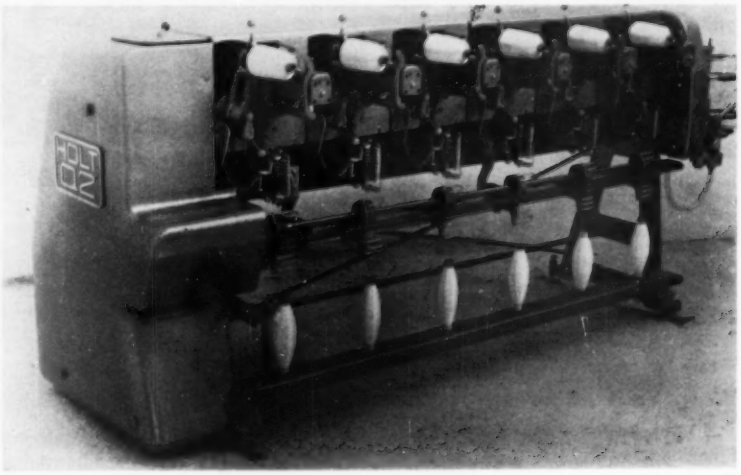
For descriptions of other equipment exhibited, see TEXTILE WORLD, March, p. 135, April, p. 141, and May, p. 154. Still others will appear in our July issue.

Fine-Yarn Winder

A cone-and-cheese winding machine for winding the finest-denier man-made-fiber yarns has been announced by Thomas Holt Ltd., Rochdale and Darwan, England. The machine, which offers complete accuracy in the control of pressure between the package and roller bail, produces packages of any predetermined degree of density.

Constant yarn speed is maintained throughout the build of the package; so no tension-variation attachments are required. A pressure-control arrangement permits the pressure of the roller bail against the package face to be preset and accurately maintained. Positive movement of the package away from the roller bail during building is done with gearing, and the action is independent of any change in the denier or tension of the yarn.

The yarn runs from the supply through the tension to the package without acute angles, and a self-threading traverse guide controls the lay of the yarn close to the package. Yarn traverse is easily set and controlled to produce tapered packages.



A sensitive stop motion for breakage or exhaustion of yarn supply permits fine yarns to be wound with a minimum of tension. Diameter stop motion is also available.

Circle T-5 on Reader-Service Card

Better V-Belts

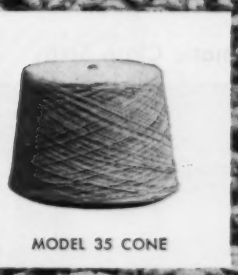
An improved V-belt, Cog-Belt, with horsepower ratings of 200 to 300% of previous standard-belt ratings has been announced by Dayton Rubber Co., Industrial Products Div., 2342 Riverview Ave., Dayton 7, Ohio.

There's also a 40% increase in horsepower ratings of its standard V-belts, Thorobred. This increase comes from improved cord construction with man-made fibers and improved compounding.

Circle T-6 on Reader-Service Card

MODEL 77 CONE

MODEL 78 CONE

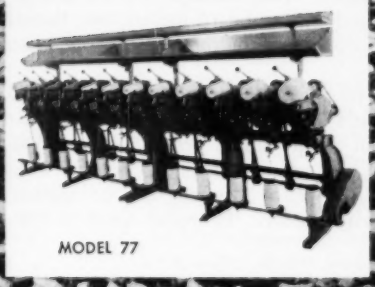


MODEL 35 CONE

FOSTER MACHINES

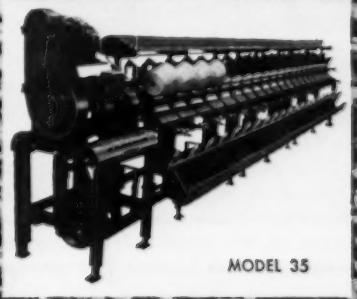
For Winding Tufted Textile Yarns

Let Us Recommend
the One Best Suited to Your Requirements



MODEL 77

MODEL 78



MODEL 35

Each of these machines is designed for a different situation. Each does a highly creditable job within its scope. Here are the details: —

MODEL 78 — This machine (built in 5 spindle units) produces 8" to 10" traverse, precise wind cones up to 16" in diameter and weighing up to 35 lbs. each. Ball bearing spindles are individually motor driven at speeds up to 800 R.P.M. It has controlled slow start and spindle brake, heavy duty belt gainer with hand wheel adjustment (or positive gear gainer, if desired), positive size stop, electric drop wire and expansion type cone holders, with handle control, for easy donning and doffing. Will wind overend from bobbins or from swifts, reels or unrolling devices.

MODEL 77 — Built in 6 spindle sections, produces 4" to 8" traverse, precise wind cones up to 10" in diameter and weighing up to 14 lbs. each. Ball bearing spindles, individually belt driven by one motor, run at speeds up to 1100 R.P.M. It has a positive, long wearing package brake and positive solid tapered pulley belt gainer. It will wind overend from bobbins, or from swifts, reels or unrolling devices. 90° build-up from face of cone prevents broken back or under-wound packages.

MODEL 35 — Built in units of 10 spindles to 80 spindles. Produces open wind 8" traverse cones up to 11" in diameter and weighing up to 9 lbs. each. Winding speeds from bobbins is from 180 to 250 Y.P.M. and from skeins 100 to 150 Y.P.M. Standard taper cone holders are 7° 22½' and 3° 51'. Package brakes and disc waxing attachments are extra. Can be equipped to wind from swifts, etc. as well as from bobbins.

Write for Model 78 bulletin A-98A, Model 77 bulletin A-99, or Model 35 bulletin B-46A.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.

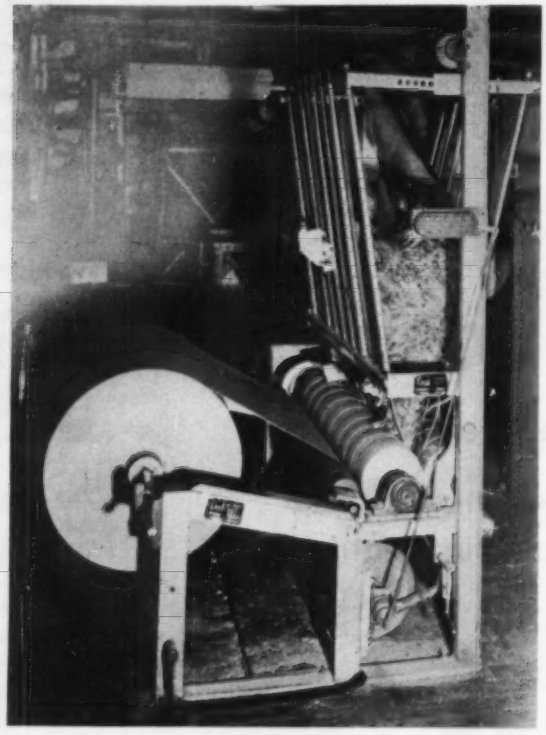
Member of American Textile Machinery Association

Southern Office, Johnston Bldg., Charlotte, N. C. Canadian Representative, Ross Whitehead & Company Limited, 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.

European Representative, Muschamp Textile Machinery (Sales) Limited, Elder Works, Wellington Road, Ashton under Lyne, Lancashire, England.

138-9

Automatic Cloth Scray



A compact scray for use in back of printing machines, tenters, or other continuous-processing machines has been marketed by Riggs & Lombard, Foot of Suffolk St., Lowell, Mass.

Designated as the Cook Vertiscray, the unit requires a minimum of floor space and is fully automatic in operation. Goods from supply rolls are drawn into the bottom of the scray and delivered from the top, thus avoiding uneven tensions and pile-ups.

Circle T-7 on Reader-Service Card

Finned-Tube Heater

Automatically controlled heating of liquids in closed systems is provided by a finned-tube heater announced by Parks-Cramer Co., Fitchburg, Mass.

The unit is deigned to handle nonvolatile heating mediums such as Dowtherm, Arochlor 1248, or H. T. Oil up to 600° F.

The heaters are available with single-stage control or with multistage control in the 100,000-Btu. and larger sizes. The finned-tube heating elements are each rated at 8 kw. and have a design output of 25,000 Btu. per hr.

Any number of heating elements may be incorporated in a heat-transfer system, according to need.

The Merrill Process system, as it is known, offers the advantages of rapid heating with close control of temperatures.

Extra-Large Roving Bobbin

A cotton yarn package that is something between a spool and a bobbin has been announced by Akron Spool & Mfg. Co., High Point, N. C.

Called Spobbin, the package cuts doffing labor cost 35% at roving by increasing bobbin capacity. No machine changes are necessary except removal of the builder cam and flyer-arm paddles.

The Spobbin is made from the mill's own roving bobbins. A fibre spool head is slipped over the barrel and pressed against the base; then a paper tube is glued over the bobbin. The final step is to mount a spool head at the top of the bobbin with screws.

The rugged, lightweight assembly can be used with umbrella creels or skewers. Build is parallel. If required, a small head can be put on top of the assembly for heavy-yarn producers who pull yarn over the top of bobbins.

Circle T-9 on Reader-Service Card

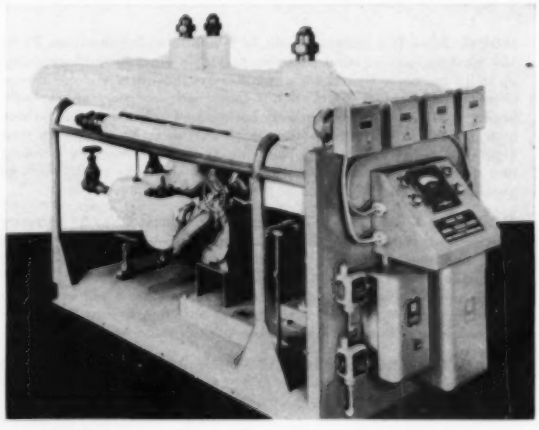
Power-Strapping Machines

A fully automatic or semiautomatic Model M20 series of power-strapping machines that do not require an operator are available from Signode Steel Strapping Co., 2600 North Western Ave., Chicago 47, Ill. Design is straight mechanical with standard motors, and therefore hydraulic and pneumatic controls and power systems are eliminated.

The machine takes strapping ⅜ x 0.010 in. to ¾ x 0.035 in. Chutes and strap take-ups are for all container sizes.

Adjustment of strap tension from 50- to 1,600-lb. tension is quick, and tension is applied smoothly without impact so that light-gauge strapping can be applied to bundles with sharp corners. Strapping speed is 196 ft. per min.

Circle T-10 on Reader-Service Card



Circle T-8 on Reader-Service Card

NON-STAINING
THILCO-TUF
Meets 3-WAY approval with leading textile producer
ZIMMERMANN FINE UPHOLSTERY FABRICS
1 MANAGEMENT, SALES AND USERS—heartily approve THILCO-TUF'S over-all trade-mark product identification!
2 MANUFACTURING—praises THILCO-TUF'S exclusive non-staining protective qualities!
3 SHIPPING DEPT.—Acclaims THILCO-TUF's ease of handling — time, labor and materials saved over costlier double wraps!

Zimmerman of Philadelphia knows fine upholstering fabrics to be sure. Now, thanks to THILCO-TUF, this leading textile company also knows how to better protect their products and save money doing it! If you haven't yet explored the cost control opportunities this protective wrap offers, read these facts carefully. THILCO-TUF is a duplex type single wrap featuring two sturdy kraft outer sheets bonded together with an exclusive blond laminant which *does not stain*! It is tough, pliable and extremely resistant to punctures, tears, moisture, grease and oils. THILCO-TUF comes in standard grades, reinforced, and/or poly-coated to meet every protection requirement, and eliminates completely the need for costly double wraps. Better check it for your products today.

Write for free Sample Kit

Just Look at These "Customized" Sales Advantages:

- Provide brand name identity through entire distribution sequence
- Help trade-up product's quality
- Add colorful eye and buy appeal
- Increase prestige value
- Stimulate repeat orders
- Reduce labeling and packaging costs
- Simplify inventory control
- Eliminate "look-alike" competition
- Provide low cost "traveling" advertising

Thilco has a full range of textile wraps

Thilco's complete line of Textile Papers includes lightweight Krafts, tissues and other wraps in numerous weights and grades in single and duplex combinations. ALL THILCO PAPERS CAN BE PRINT-DECORATED for Brand Name identification and promotional advantages.

THILCO Functional Papers FOR TEXTILES

OFFICES: NEW YORK, CHICAGO, DETROIT, BOSTON, CLEVELAND, CINCINNATI, CHARLOTTE

THILMANY PULP & PAPER CO. • KAUKAUNA, WISCONSIN

For more data, circle A-70 on Reader Service Card

Outerwear Knitting Machine

Circle T-11 on Reader-Service Card

Speed of over 90 courses per minute is one feature of an outerwear knitting machine being produced by William E. Cotton Ltd. (Bentley Group), Loughborough, England.

The machine has a shock-free carrier that is slowed down at the end of its movement so that stoppage is extremely smooth.

The machine operates from one set to another without operator attention. In addition to automatic operation for mass production of standard fabrics, it can also be operated manually for production of more-specialized fabrics.

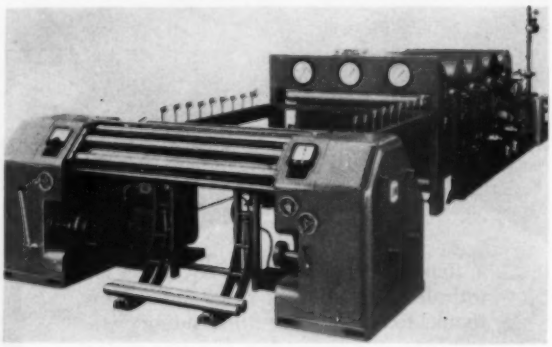
High-Speed Slasher

A high-speed slasher for spun and filament man-made-fiber yarns with either multicylinder or hot-air drying has been introduced by Joseph Hibbert & Co. Ltd., Darwen, England. Automatic speed control maintains the desired moisture content of yarns.

Either single or double size boxes are available. The Shirley size box can also be supplied. A mechanical headstock insures predetermined tension throughout beam build-up.

A feature of the headstock is that two beams can be wound at once, each with different yarn densities. Semi-automatic beam doffing is provided.

A hydraulic variable-speed gear unit controls speed to provide minimum yarn tension and reduced warp stretch. Speed is up to 120 yds. per min.



Circle T-12 on Reader-Service Card

Heavy-Duty Sweeper

A heavy-duty vacuum-equipped sweeper that's powered by a 24-v., 365-amp.-hr. battery has been announced by G. H. Tennant Co., 721 N. Lilac Dr., Minneapolis 22, Minn. The sweeper, Model 80-E, sweeps 8 hrs. on a single battery charge.

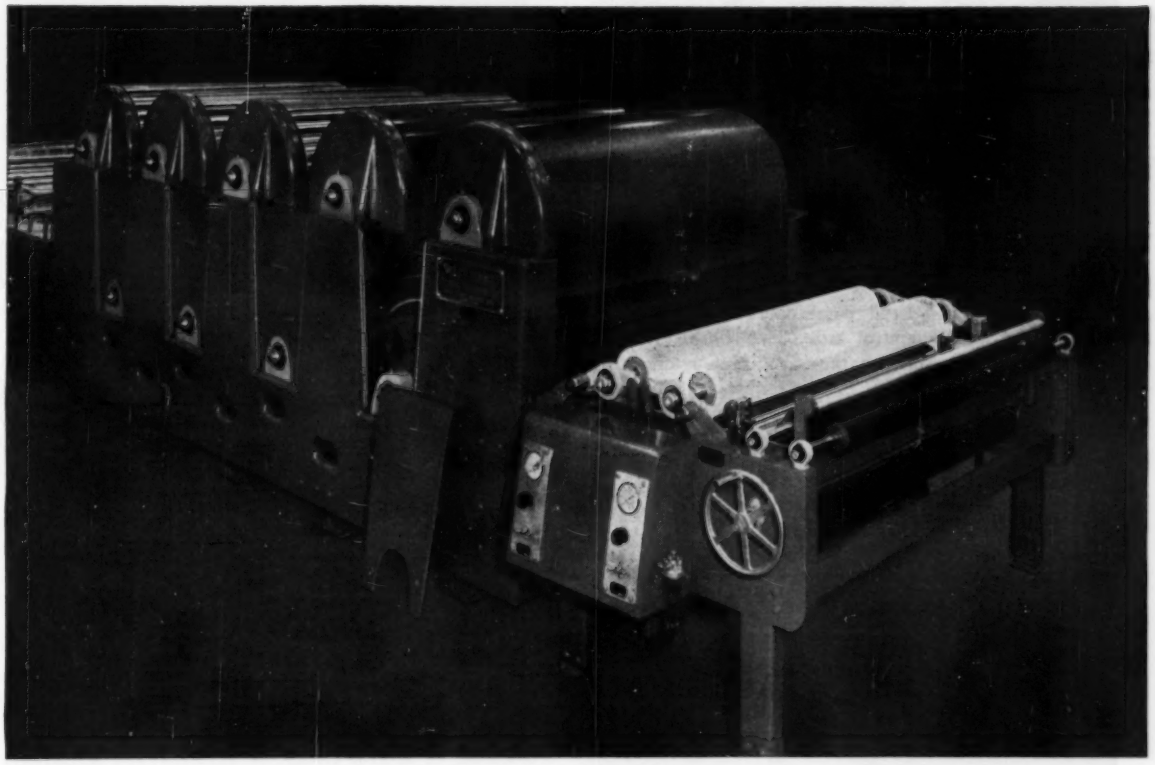
The machine travels at speeds up to 4.5 mph. The maximum cleaning path is 53 ins. including a side brush for flush-with-wall sweeping. A main cylindrical brush is 42 ins. wide.

The machine has two motors of 1-hp. d.c., one for propelling and one for sweeping. Since brush speed and vacuum action are constant, the machine travels slowly in congested areas with no loss in sweeping efficiency or dust control.

Other special features are: foot-pedal controls for forward-reverse and brake, front-wheel drive through ⅝-in. roller chains, 65-in. turning radius, automotive cam-and-lever steering, three forward speeds and three reverse speeds, and 5-min. brush changing.

Circle T-13 on Reader-Service Card

Why Use TWO Size Boxes When ONE Will Do?



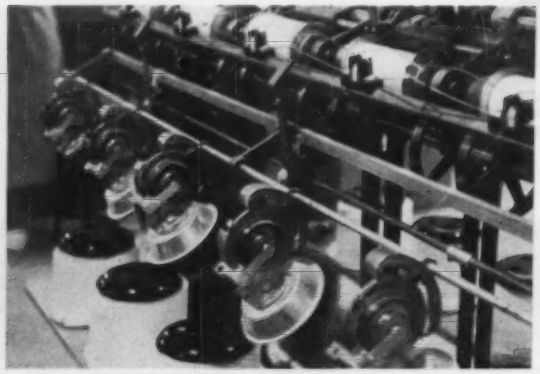
WEST POINT's High Capacity Double-Squeeze Size Box is designed for *both* light and heavy warps. This versatile new size box is now running up to 6040 - 22's in one standard width size box. Other heavy warps now being slashed in West Point's high capacity size box are 5500 - 18's and 4400 - 10's.

Increased size penetration, adjustable for light or heavy sets. Double immersion rolls, insulated vat, and rubber-covered pneumatically-operated squeeze rolls are standard equipment. Easy-to-clean design and rugged construction for the high speeds of modern slashing.

West Point Foundry makes the PACESETTER Multi-Cylinder Slasher. In the last three years alone, over 50 textile mills have installed more than 130 West Point Foundry Multi-Cylinder Slashers.

WEST POINT
Foundry & Machine
Company
WEST POINT, GEORGIA

Redraw Tension

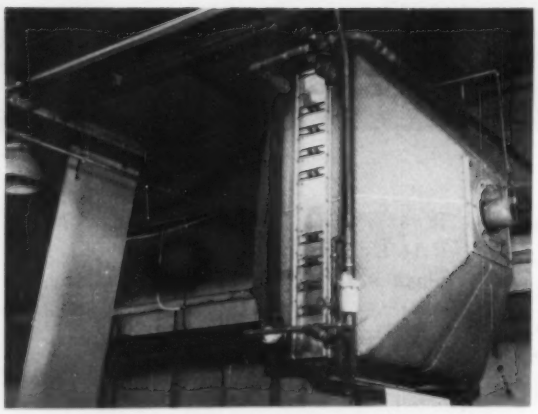


A redraw compensating tension that maintains a preset tension on yarn as it is wound on the spool from any type of supply package has been announced by Kidde Textile Machinery Corp., 35 Farrand St., Bloomfield, N. J.

Yarn is tensioned as it passes between two spring-loaded disks and a control arm. The control arm relieves the disk pressure on the yarn until a tension is produced equal to the force being exerted on the control arm by a spiral spring set at the desired tension. The compensator can be quickly set for any tension up to 45 grams.

Circle T-14 on Reader-Service Card

Predryer



An auxiliary dryer for tenters or dyeing ranges has been introduced by Wall & Co. Ltd., Bradford Bldgs., Bolton, England.

The unit, designated as an Air Spin Dryer, depends on scientifically directed steam-heated air to remove up to 5 lbs. per sq. ft. per hr. of moisture from fabric passing through. For temperatures above 250° F., electrical booster units may be added. The normal working length of the dryer is 72 ins.

Circle T-15 on Reader-Service Card

Print-Register Control

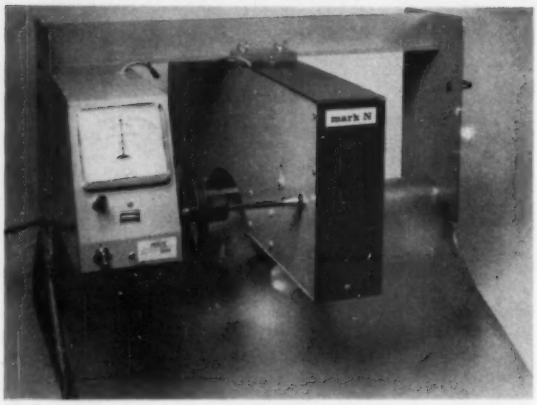
A combination of electronic and mechanical principles is used to actuate a print-register apparatus marketed by Machineworks of Helmes, Tegelen, Netherlands.

The controller consists of a track scanner, a cylinder scanner, an electronic amplifier, and a control panel.

Multicolor prints on textiles can be kept in register as closely as 0.008 in. with the control.

Circle T-16 on Reader-Service Card

Thickness Gauge



The thickness of webs, bats, foil, or other sheet material is accurately measured by means of a noncontact gauge available from Projecto-graph Instrument Co., Clinton, Conn.

The unit can be set for a wanted thickness of material; and as the material passes under the gauge, a meter reads off variations from the norm. The meter scale is available in several grades of accuracy and sensitivity. Normally, each scale division corresponds to 1/10,000 in.

Electronic-optical principles are used to check thickness; and moisture or the dielectric properties of the material to be measured do not affect the accuracy of the gauge.

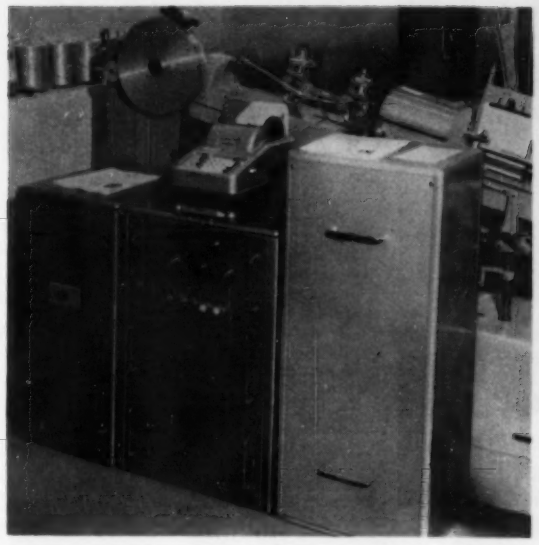
Circle T-17 on Reader-Service Card

Shuttle Eye

Draper Corp., Hopedale, Mass., has announced its No. 380 shuttle eye for more positive threading of man-made-fiber yarns. With this eye, filling is positively trapped and is held at the side eye opening.

Another outstanding feature is a trap that prevents filling from whipping out at the back of the eye. A similar and interchangeable cotton-type eye is also available.

Circle T-18 on Reader-Service Card



Automatic Yarn Tester

Completely automated testing of yarns and cords in the tensile range up to 50 lbs. has been made commercially possible by development of the Scotamatic tester by Scott Testers, Inc., 95 Blackstone St., Providence, R. I.

The machine operates completely unattended after the operator introduces a sample of yarn or cord. Testing and recording are done throughout an entire bobbin or group of samples, length after length.

Recording and evaluation of test results are in three values: (1) stretch at a predetermined point of load, (2) ultimate tensile strength, and (3) ultimate elongation. The tabulator summarizes the individual values at the completion of each 10 tests. Each value for each test is recorded individually as well as totaled for the 10.

Circle T-19 on Reader-Service Card

Textile Slide Rule

A slide rule with special textile scales has been introduced by A. W. Faber-Castell Pencil Co., Inc., 41 Dickerson St., Newark, N. J.

In addition to standard scales, the Castell 57/47 e rule has scales for calculating yarn twist, teeth in change gears, twist-yarn numbers, machine production, cloth manufacture, and other spinning, twisting, weaving, and knitting operations.

A special feature is a scale that converts 14 yarn-numbering systems to corresponding numbers with a single setting. The new international Tex system is included.

Circle T-20 on Reader-Service Card

Variable-Speed Pulley

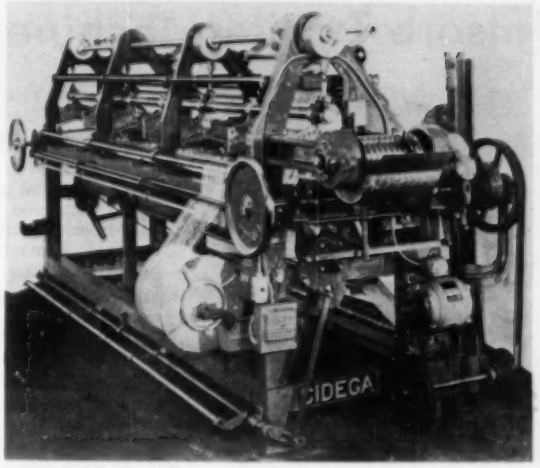
A variable-speed pulley that provides ratios up to 3-to-1 with 3½ hp. at 1,150 rpm. or 5 hp. at 1,750 rpm. is available from Lovejoy Flexible Coupling Co., Dept. TWN, 4949 W. Lake St., Chicago 44, Ill.

Both pulley faces move simultaneously and equally to give constant belt alignment, and each side is independently activated by its own spring. Curved pulley faces maintain full contact with belt sides all the time to give maximum efficiency.

The pulley can be installed quickly on old or new equipment. It uses a 1 13/16-in. top-width variable-speed belt, and standard bore sizes are 1 to 1⅜ ins. with a 3½-in. bore length.

Circle T-21 on Reader-Service Card

138-In. Knitting Machine



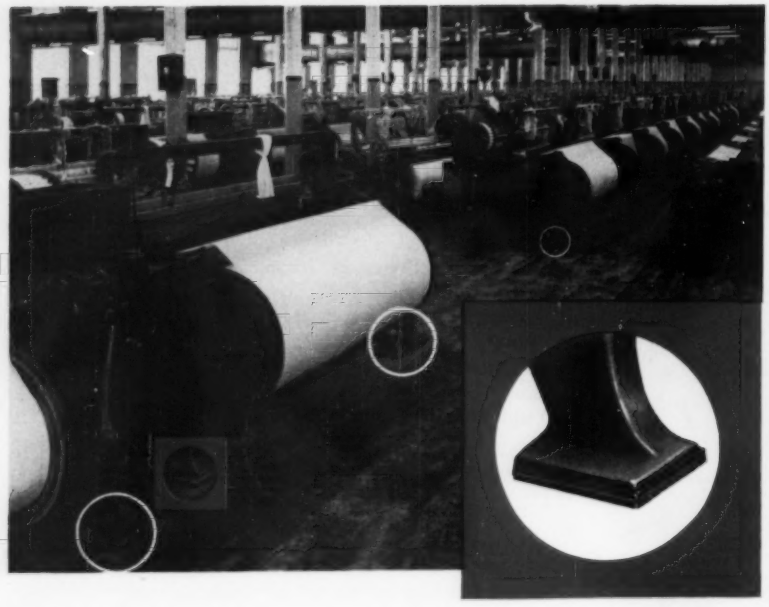
A 138-in. knitting machine that runs at 480 rpm. has been designed by Cidega Machine Mfg. Co., Inc., River Edge, N. J. Standard gauge is 10 needles per inch, but coarser and finer gauges can be obtained.

The machine has 10 weft bars to make a great variety of fabric designs. One operator can handle up to six machines on curtain materials, bedspreads, and pile fabrics.

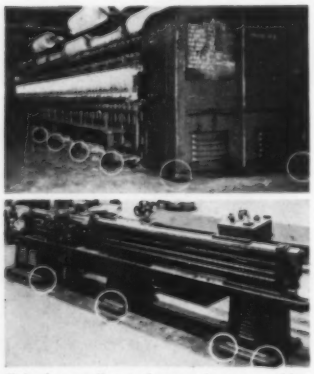
The machine has an electric warp stop motion, ball bearings throughout, and an interchangeable hardened sectional needle-bed gauge. The over-all design minimizes vibration and insures smooth operation.

Circle T-22 on Reader-Service Card

CONTINUED ON PAGE 150



How to Cut Costs, Improve Performance with Unisorb Textile Machine Mounts



Unisorb saves time and money in your machine shop, too. There's a density for every type of machine tool, plus line of Unisorb Level-Rite Mounts.

Unisorb pads give you an exclusive three-way advantage every time you install or move a machine.

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NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Opening machinery—A fiber-metering machine that holds weight variation within ±1½% and a screenless condenser with 2,000-lbs.-per-hr. capacity are described in literature from Fiber Controls Corp. (F-1)

Nylon cap-bar tips—For roving and spinning are described in mailer that includes a sample tip. Saco-Lowell Replacement Parts Div., Saco-Lowell Shops. (F-2)

Card feeders and aprons—For woolen and worsted cards are described in technical literature that gives specifications and operating information concerning Bramwell and Harwood products. Geo. S. Harwood & Son, Inc. (F-3)

Ring twister—That produces up to 12-lb. packages and is equipped with a stop motion for each end in the ply is described in technical bulletin from Collins Bros. Machine Co., Inc. (F-4)

Sample dyeing unit—For man-made fibers that permits temperatures up to and above 130° C. and has an eight-beaker capacity is described in leaflet from Longclose Engineering Co. Ltd. (F-5)

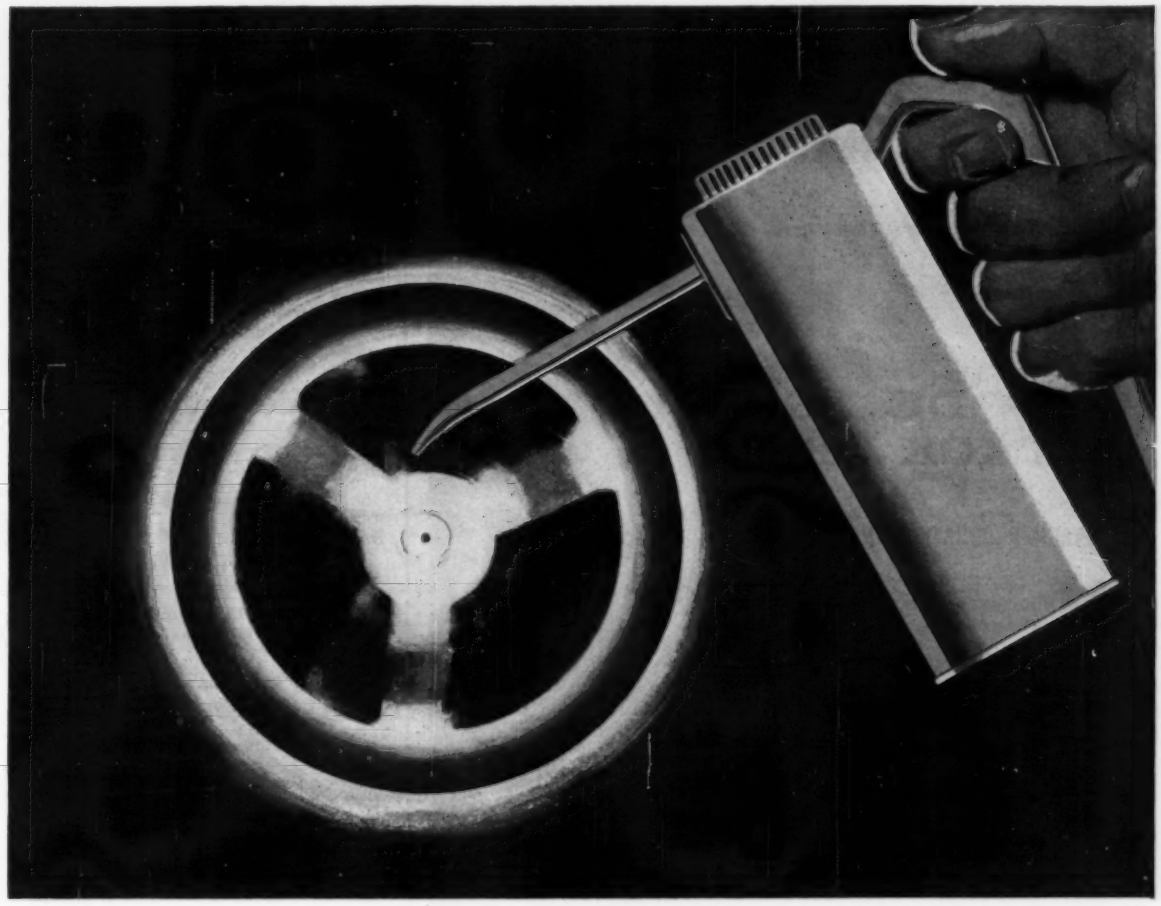
Adjustable-speed drive—With ratings from ¾ to 7½ hp. designed to supply precise operating speeds for process machinery is described in technical bulletin that gives dimensions and other engineering information. Louis Allis Co. (F-6)

Electronic air cleaners—That require less space than other high-velocity precipitators and have an efficiency of 97% as determined by the dust-spot test method are described in bulletin from American Air Filter Co., Inc. (F-7)

Toe-closing machine—Bulletin describing specifications and operation of a two-needle, three-thread machine for closing toes on GeTaZ gusset-panel loopless stockings is available from Merrow Machine Co. (F-8)

Yarn-tension controls—That cover a range from almost zero to 100 grams and are especially suitable for use with tire cord, rubber, glass, and carpet yarns are described in a new bulletin. The tension controls can be used at warping, winding, quilling, and circular knitting. Lindly & Co., Inc. (F-9)

Portable evenness tester—For carding, drawing, roving, and spinning that checks the uniformity of work in process so that faults can be corrected at the source is described in literature from Universal Winding Co. (F-10)



Setting new standards in textile machine lubrication

NEW SHELL VEXILLA OILS

To assure high compatibility with today's synthetic fabrics, a completely new line of premium-quality textile machine lubricants has been developed—NEW SHELL VEXILLA OILS. These new oils are available in a wide viscosity range to satisfy all operating requirements.

Check these outstanding advantages:

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2. High Oxidation Resistance — New Vexilla Oils contain special oxidation inhibitors to prevent increase of viscosity during service and storage. High viscosity index base oils minimize thinning out at high temperatures.

3. Eliminate Bearing Corrosion — New Vexilla Oils contain a newly developed rust inhibitor which keeps bearings *clean* and *free from corrosion.*

4. Non-Gummy—New Vexilla Oils contain no fixed oils such as lard, tallow and sperm oils to cause gumming. In automatic lubricating systems, they will not form harmful metallic soaps when in contact with zinc or copper.

5. Outstanding Wetting Properties—New Vexilla Oils offer superior metal-wetting properties because of the carefully engineered balance of components and polar character.

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NEW SHELL VEXILLA OILS

. . . quality textile machine lubricants

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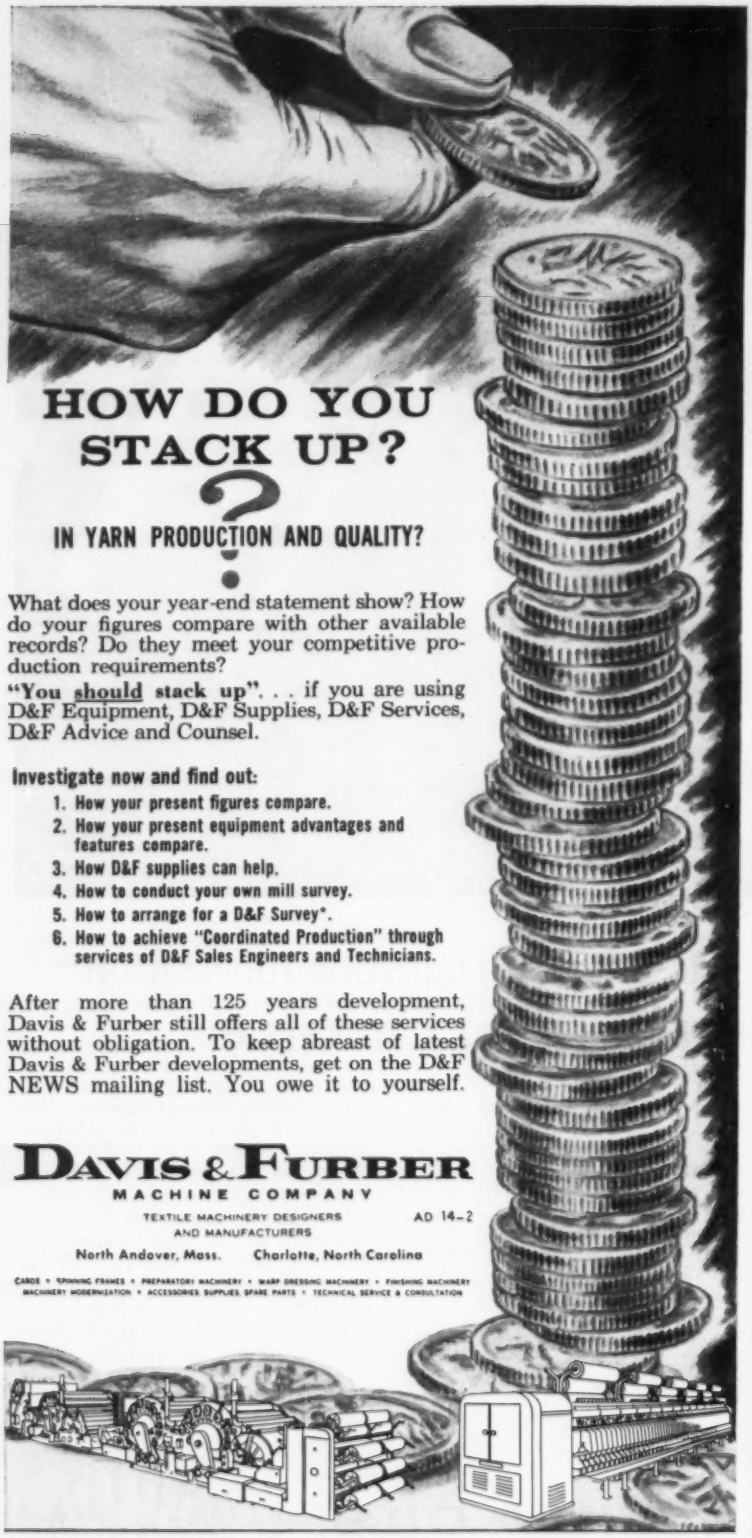
HOW DO YOU STACK UP?
IN YARN PRODUCTION AND QUALITY?
What does your year-end statement show? How do your figures compare with other available records? Do they meet your competitive production requirements?
"You should stack up"... if you are using D&F Equipment, D&F Supplies, D&F Services, D&F Advice and Counsel.
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An objective, impartial D&F Survey by mill-trained technicians often reveals unsuspected inconsistencies. At the same time, a study of all production phases can produce a long or short range plan for expansion in accordance with time and budget requirements.

CHEMICALS & SUPPLIES

Four textile chemicals—Isopropyl chloroformate, glycol bis chloroformate, and butadiene monoxide that react to form organic carbonates, polycarbonates, carbamates, and polycarbamates are described in a technical bulletin from Columbia-Southern Chemical Corp. (F-11)

Sodium phosphates — Revised technical bulletin and use-reference guide gives physical and chemical properties of many sodium phosphate products used in soaps and detergents and as deflocculating agents and buffering agents. Inorganic Chemicals Div., Monsanto Chemical Co. (F-12)

Dyed yarn—"What You Should Know When Ordering Yarn Dyeing or Colored Yarns" is the title of a booklet that provides basic data and suggestions concerning yarn quality, color quality, put-up, storing, shipping, etc. Franklin Process Co. Div., Indian Head Mills, Inc. (F-13)

Fluorescent and phosphorescent pigments—Known and potential applications and technical data concerning 15 pigments that glow in the dark are described in a brochure from United States Radium Corp. (F-14)

Man-made fibers—Along with chemicals and plastics are discussed in nontechnical illustrated brochure. History, production, and markets are stressed. Celanese Corp. of America. (F-15)

Ethylene amines—65-p. book for research chemists and technical personnel that covers properties, reactions, uses, first-aid technique, handling and storage, property graphs, and other technical data is available from Organic Chemical Intermediate Sales, Dow Chemical Co. (F-16)

Fiber 500—Booklet introduces Enka Fiber 500 and gives chemical and physical properties of the new experimental regenerated cellulosic material. American Enka Corp. (F-17)

Textile auxiliaries—Are described in full detail as to properties and uses in a 200-p. catalog from Metro-Atlantic, Inc. (F-18)

Nonwoven bonding agent—Technical bulletin on polystyrene latex tells how the material is used to harden soft film-forming latices, to bond fibers and pigments, or to act as a saturant for glass rovings and nonwoven fabrics. Dow Chemical Co. (F-19)

Bleaching, oxidizing, and stripping—With Textone, a sodium-chlorite product, are discussed in a 26-p. illustrated booklet that provides a ready source of information for textile mills using the chemical. Chemicals Div., Olin Mathieson Chemical Corp. (F-20)

Dyeing theories and techniques—Are explained in a booklet that covers general description of textile fibers, classification of dyes, explanation of dyeing processes, and specific classes of dyes

Cut Textile-mill Costs Three Ways with New General Electric Motors

- **LOW INITIAL COST**
- **REDUCED MAINTENANCE**
- **LONG MOTOR LIFE**

Now you can select new General Electric Tri-Clad* motors designed exclusively for maximum protection in the toughest textile-mill application conditions! And these special motors reduce your mill-operating costs by outperforming and outlasting other motors—*at no increase in initial cost!* Here's how you'll save with new G-E Textile Motors:

COMPLETE EXPULSION OF LINT by the exclusive new endshield design prevents damages caused by penetration of lint to the motor interior.

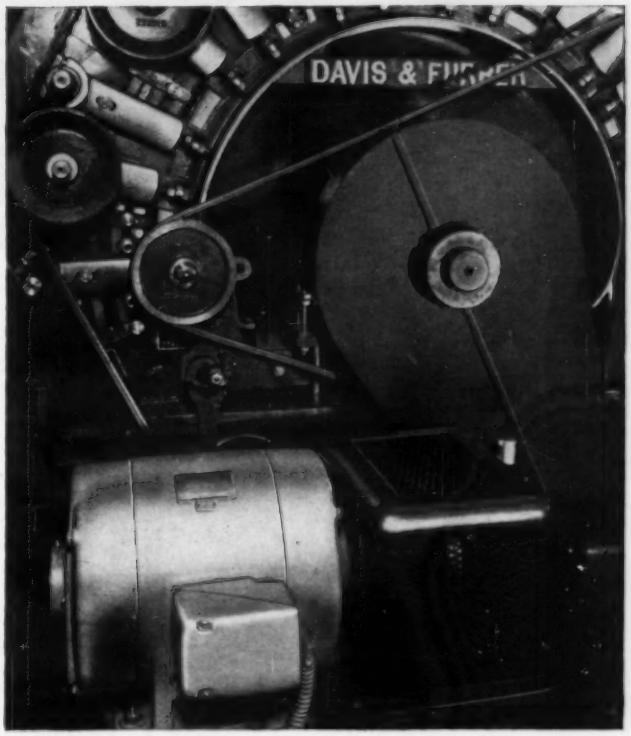
GREATER PROTECTION against dirt, moisture, other contaminants is provided by totally enclosed motor —virtually eliminating costly motor maintenance.

LONG-LASTING, OVERSIZED BALL BEARINGS and grease reservoir, plus extended close-running seals, mean increased motor life and performance.

MAXIMUM RIGIDITY AND STRENGTH of the cast-iron frame and endshields protects against accidental damage of G-E textile motors.

These are just a few of the reasons why new General Electric motors will reduce your textile-mill operating expenses. For the full story, just contact your nearby G-E motor distributor or Apparatus Sales representative; or write direct to Section 894-2, General Electric Company, Schenectady 5, N. Y.

*Registered trademark of General Electric Co.



NEW RECORDS of performance and reliability are being set by spinning frames, pickers and opening equipment. Modern woolen card above is driven by General Electric screened dripproof motor.

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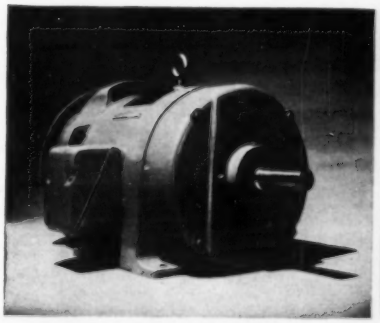

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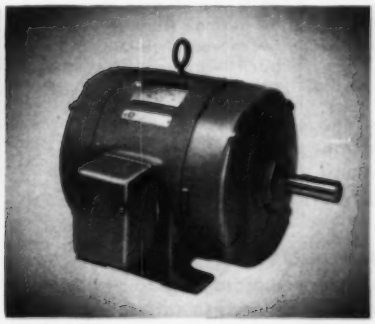
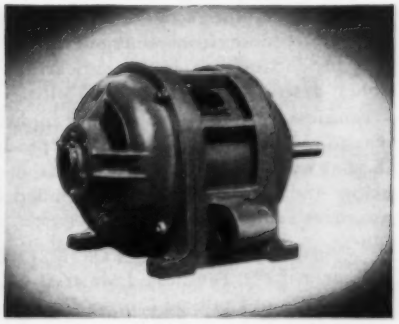


Reliable G-E dripproof motors fill need for general purpose application.



G-E screenless open motors are designed for textile needs from 30 to 100 hp.

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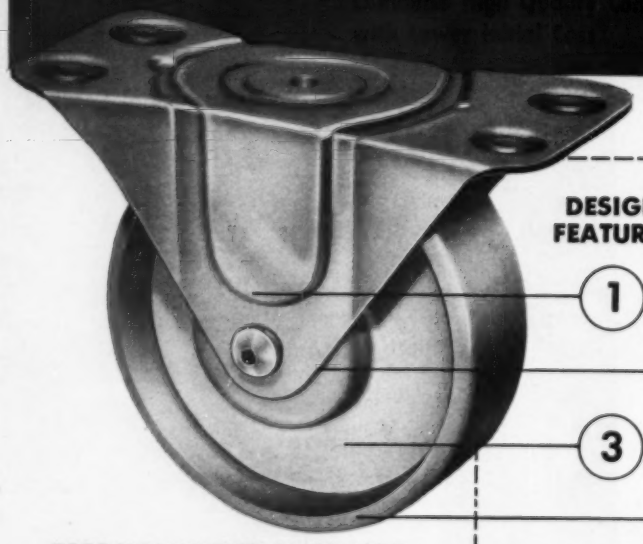
For more data, circle A-76 on Reader Service Card

NOELTING
Faultless
Casters

Faultless Textile Casters



ESPECIALLY DESIGNED FOR

- **DOFF BOXES**
- **LAP TRUCKS**
- **ROVING TRUCKS**

Here, in this new Faultless 500 Series Textile Caster all of the features textile men require—deep drawn thread guards and lower initial cost—are combined to give a rigid caster that assures freedom from snagged threads that stop production. Sealed wheel bearings available if desired. Load capacity 175 lbs.

Faultless castered equipment can lead the way to reduced costs and increased production in your own plant. Casters for light, medium, heavy and special duties are included in the extensive Faultless line.

1 Drawn steel construction deeply corrugated to carry maximum rated loads with a substantial safety margin.

2 Ball bearing assembly in hub to absorb side thrust.

3 Deep drawn thread guards fit snugly between wheel hub and caster horn — assure maximum protection, trouble-free operation.

4 Semi-steel wheel has fully machined face with generous radii at tread edge.

ASK YOUR DISTRIBUTOR

Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. He and one of the strategically located Faultless Sales Engineers are available to work with you on every handling problem in your plant. Both are listed in the Yellow Pages of your phone book under "Casters," beneath the Faultless heading. Write for complete information.

for different fibers. National Aniline Div., Allied Chemical Corp. (F-21)

Antistatic agent—Leaflet outlines the advantages of finishing napped man-made-fiber fabrics with ASTM 108, an antistatic agent, and gives the manufacturer's recommendations for proper application so that the static charge leaks off even after a long series of washings. Onyx Oil & Chemical Co. (F-22)

ENGINEERING & MAINTENANCE

Low-voltage equipment—A condensed buying catalog gives specifications and prices of items such as circuit-breaker load centers, fuse puller panels, safety switches, panel boards, etc. Distribution Unit, General Electric Co. (F-23)

Air and fume control—Two illustrated bulletins describe the construction and application of flexible hose for use in air-handling and fume-control work. Flexaust Co. Div., Callahan Mining Corp. (F-24)

V-belts—Booklet describes new line of replacement belts for variable-speed units by make and model and gives interchange guide for other makes of belts. Browning Mfg. Co. (F-25)

Cement floors—Leaflet tells of improved packaging method for Sylox, a type of oxychloride cement floor, that reduces costs from 6½ to 12¢ per sq. ft. Weight is reduced 20% by putting up the material in a two-component unit. United Laboratories, Inc. (F-26)

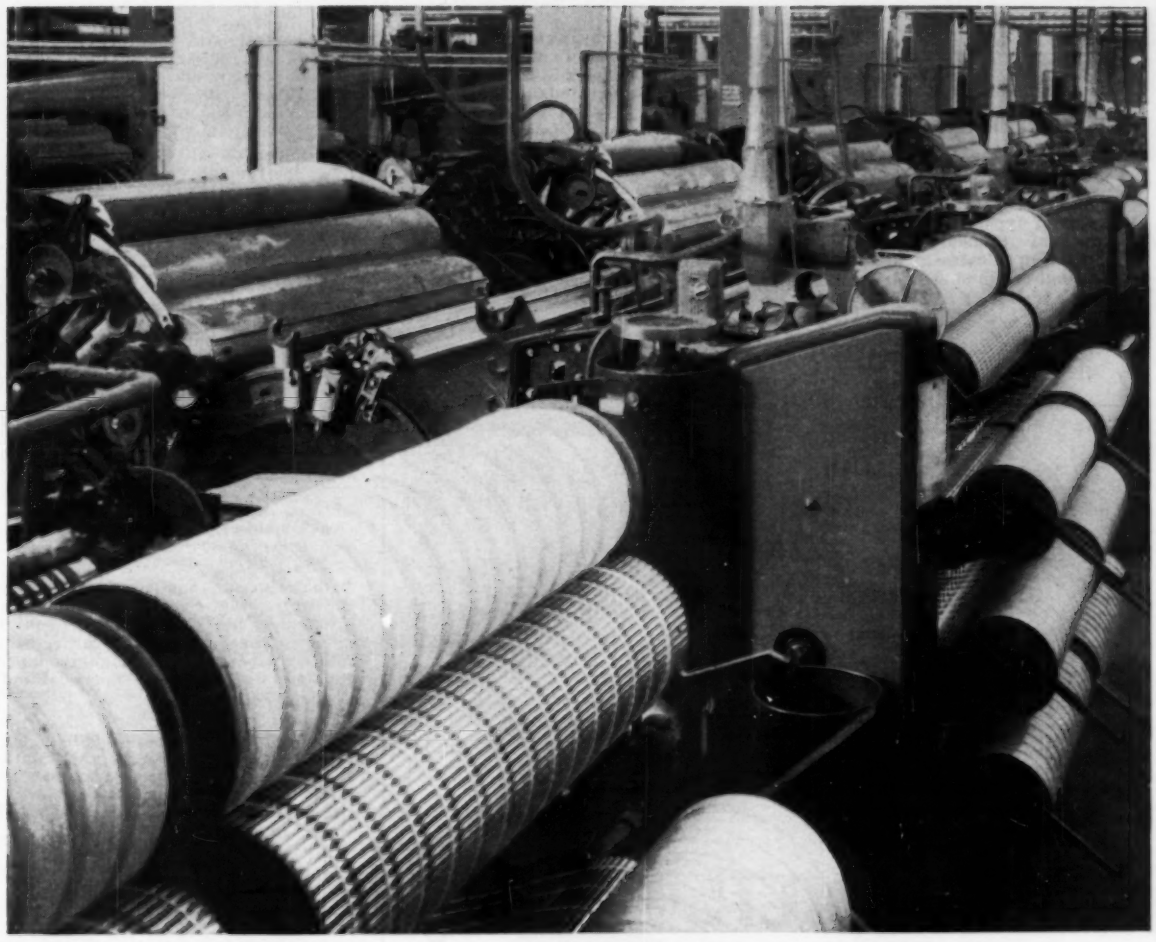
Lighted controls—A 20-p. catalog tells how lighted indicator and pushbutton switch devices are designed for today's modern panel controls. Full-dimension drawings and photographs are included. Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-27)

Engineering-literature index—All technical and product bulletins and data sheets published by the industrial and valve divisions of the manufacturer are listed in a 24-p. bulletin from Industrial Div., Minneapolis-Honeywell Regulator Co. (F-28)

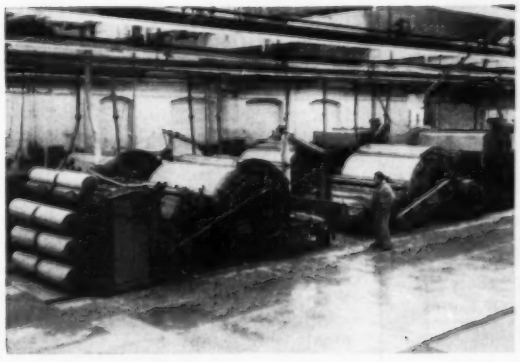
Motor-selector guide—Gives concise selection data in tabular form to help users of a.c. motors through 200 hp. in size. NEMA design classes, speed-frequency relationship, and current and torque values are explained. Reliance Electric & Engineering Co. (F-29)

Worm-gear speed reducers—Complete data book on a new-type reducer with external fins for cooling tells how the reducer can operate in three different positions to save space. Five tables give service factors, load ratings, dimensions, and weights. Link-Belt Co. (F-30)

"North-sky" light—Is produced by a new line of open reflector and enclosed color-corrected fluorescent lighting fix-



ALCOA ALUMINUM HELPS DAVIS & FURBER CARD SET NEW PRODUCTION MARK



Worker and stripper rolls and side and roller covers of Alcoa® Aluminum on Davis & Furber Model L 84-in. woolen card are helping mills set new production records. Lighter, stronger aluminum permits major savings in weight for higher operating efficiency. It means easier, faster handling when the rolls are removed for cleaning and stripping. Corrosion resistance of aluminum assures freedom from spoilage—plus longer machine life.

Alcoa Aluminum is playing a notable role in increasing output and lowering costs in virtually every area of textile manufacturing. In yarn preparation equipment, aluminum castings cut down excess weight, stand up better in high relative humidity. In loom and weaving machinery, high-strength properties and high dimensional stability account for use of aluminum in thousands of warp beams. In wet processes, aluminum's acid resistance makes it a natural choice for most dyeing and finishing operations. And for other plant equipment and accessories such as bobbins, spools and pirns, aluminum's proved stability under controlled temperature conditions marks it as the most economical choice.

For more information on how aluminum can help you obtain high-volume production at the lowest possible cost, write today. Aluminum Company of America, 2284-F Alcoa Building, Pittsburgh 19, Pa.

Your Guide to the Best in Aluminum Value

For Exciting Drama Watch "Alcoa Theatre," Alternate Mondays, NBC-TV, and "Alcoa Presents," Every Tuesday, ABC-TV

ALCOA ALUMINUM

For more data, circle A-78 on Reader Service Card

tures for companies that work with color. Illustrated brochure from MacBeth Daylighting Corp. (F-31)

GENERAL

Typewriter selection—More than 100 styles of type are available with the improved Standard typewriter described in illustrated brochure from Remington Rand Div., Sperry Rand Corp. (F-32)

Photographic automation—A 24-p. booklet tells how automatic photography can be used in industry to make timestudies, control traffic, and trap burglars. Karl Heitz, Inc. (F-33)

Heavy-duty lift truck—With dual-range, power-shifted Hystomatic transmission is described in brochure that also covers the design and performance features of the machine. Hyster Co. (F-34)

Corrugated board—Description, specifications, and performance data for a new moisture-resistant board are covered in technical bulletin from Hinde & Dauche. (F-35)

Fire control—An 18x24-in. two-color wall chart that explains the three classes of fires and tells which type of extinguisher to use is available from Walter Kidde & Co., Inc. (F-36)

Instrument rental—Bulletin describes new instrument-rental program involving more than 13,000 instruments of all types that are available for shipment within 4 hrs. General Electric Co. (F-37)

Materials-handling problems—Are discussed in a 16-p. magazine called "Lever." Of special interest are articles on 24-v. narrow-isle equipment and electric passenger units. Lewis-Shepard Products, Inc. (F-38)

Office copying techniques—Illustrated booklet tells how to save money and increase efficiency in administration, accounting, sales, and other office operations by reproducing papers with Verifax dry-copying machines. Business Photo Methods Div., Eastman Kodak Co. (F-39)

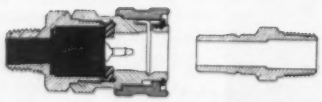
Data-processing equipment—Brochure illustrates the broad range of data processing and shows specific equipment to use for punched cards, perforated paper tape, or magnetic tape. Remington Rand Div., Sperry Rand Corp. (F-40)

Motor transportation—Booklet describes basic markets in the South and shows how to reach various areas in the shortest possible time with specialized-service trailers. Johnson Motor Lines, Inc. (F-41)

Supervisor development—Is covered in "Supervisory Growth," a comprehensive brochure that contains generous samples of actual motivating material for supervisors. Scope includes the handling of job problems and personal development of textile supervisors. Elliott Service Co. (F-42)

- Tough...compact...smaller...lighter.
- Handles more air—with minimum pressure drop.
- Quick connection and disconnection.
- Instant automatic flow or shut-off.
- Handles any job in your shop using ¾" to ⅛" connections—from the air line to the air tool.
- Locking ring provides positive lock ...tight fit. Equipped with automatic sleeve lock.
- All Series 2-RL Sockets and Plugs are interchangeable—likewise all Series 3-RL Sockets and Plugs. Eliminates all need for various size couplings in hook-up—makes it easy to keep stock of parts in balance—holds inventories to a minimum.

with the HANSEN Series RL QUICK-CONNECTIVE Ring-Lock Coupling



Socket, when disconnected, automatically shuts off air by leak-proof seal of metal valve against rubber valve seat.

Write for the Hansen Catalog... a ready reference when you want information on couplings in a hurry.

Quick-Connective Fluid Line Couplings for AIR • OIL • GREASE • HYDRAULIC FLUIDS WATER • VACUUM • STEAM • OXYGEN • ACETYLENE REFRIGERANTS • GASOLINE • COOLANTS • LP-GAS

SINCE 1915

REPRESENTATIVES IN PRINCIPAL CITIES
QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 35, OHIO

JACQUARD DESIGNS

CONTINUED FROM PAGE 59

Designer's Job Is Cut Drastically

Designs from a simple-ply damask to a multiple-ply matelassé are possible simply by punching the correct keys.

In addition to the fabric design, holes for lacing are punched during the same operation.

Since the mill designer no longer has to paint the design on cross-section paper, his work is almost wholly supervisory and most of his time is spent in (1) computing the materials and setup cost in weaving a new pattern, (2) calculating the number of picks and warp and filling yarns needed, (3) calculating the number of over-all cards needed for a pattern, (4) checking new woven patterns for accuracy, and (5) similar work.

Ideal's Trade-In Allowance

Applies to Completely New Frames or Rebuilt Drawing Frames

Take your choice. Either way you save substantially. Either way you get drawing frames with the famous Feathertouch action which are equal in appearance, performance, production, efficiency, and quality **to any completely new drawing on the market.**

Rebuilt frames can be furnished in either 16" or 18" gauge four delivery frames. Every working part above the can table is new. These are factory rebuilt . . . not mill changeovers. The complete frames are delivered to your mill ready to set in place and run.

These are the only parts of the original frames which are used in the rebuilt frames and they are completely reconditioned and refinished. You get the complete IDEAL Frames as shown in large circle, ready to run upon arrival at your mill.

Standard or Optional Features

Individual Vacuumatic Cleaning
Indvidual Drives
Electric Knock-Off Actions
Individual Motors
Electro-Magnetic Clutch
Ball Bearing Spacing Sections
No Shafting, Flat Pulleys, or Belts
The Famous Feathertouch Action
—produces highest quality sliver—at over 400 ft. per min.
Frames can be operated singly or in multiples

The Originators of High Speed Drawing

Ideal Industries, Inc. Bessemer City, N. C.

For more data, circle A-80 on Reader Service Card

NEWS ABOUT MILLS

CONTINUED FROM PAGE 17

Ala., has started work on a $250,000 expansion and modernization program.

West Knitting Corp., Wadesboro, N. C., is building a one-story addition to its Mill No. 2. It will contain about 24,000 sq. ft. of floor space. The entire knitting department will move to the new addition to make room in Mill No. 1 for additional cutting and sewing.

LINT PROBLEM

CONTINUED FROM PAGE 50

The screening is clamped to the frames with ½-in. flat iron and bolts. The V-ends of the frame are closed with ¼-in. plywood.

The entire construction gives a screen area slightly more than twice the area of the wall opening. As a result, there has been no restriction in air flow since the new system has been in operation.

New Screens Shed Lint

Lint is removed from the saran easily; there is no tendency for the lint to wrap around or cling to the strands of saran.

At present, the accumulations of lint are removed from the screen every 4 to 8 hrs., depending on the amount of air recirculated.

The lint is removed with a long-handled floor brush. All three frames are cleaned in only 2 to 3 mins. Most of the time only one stroke of the brush is needed to clean a section of screen.

The amount of lint going back to the washer has been reduced to one-fifth. Eliminator blades are now cleaned on week ends with much less time and effort. And the frequency of cleaning the filter screen between the tank and pump has been reduced from once every 2 hrs. to once every 24 hrs.

As a result of the success of the new-type screens in the spinning room, additional screens were built for four other production-department central stations throughout the mill.

COUNT ENDS DOWN

CONTINUED FROM PAGE 53

Only tests made at the same time and covering all operating machines can be accepted with confidence.

Each Frame Is Checked Daily

The ratio-delay system has none of these faults since it permits each frame to be checked daily. The breaks, recorded per side, are tallied readily and converted to ends down per 1,000 sp. hrs. A daily comparison from side to side, operator to operator, and yarn number to yarn number are but a few of the end results.

The method also makes it practical to establish control limits by frame and by yarn number based on average ends down. And after establishing control limits, it is possible to maintain a frame log to record the ends-down history of each frame. This log can be used as a basis for mechanical corrective action against those frames that apparently are "out of control." Frequently, 10% of a mill's frames—well scattered — are responsible for 30% of the total ends down.

SINCE 1869

"VERYBEST" LOOM NECESSITIES

JACOBS

Lug Straps, Picker Sticks, Pickers,
Dobby Cords, Leather Straps
and other Loom Parts.

THE BULLARD CLARK COMPANY

JACOBS

SOUTHERN DIVISION
Charlotte, N. C.

NORTHERN DIVISION
Danielson, Conn.

For more data, circle A-81 on Reader Service Card

Automatic Winders for Rewound Filling

to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.

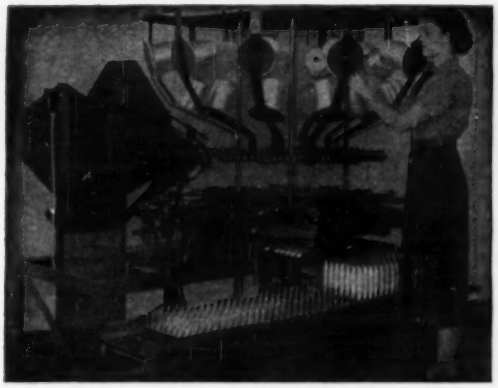
Abbott Traveling Spindle Automatic Quillers

For winding coarse cotton, worsted, woolen yarns, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

Abbott Model II High Speed Automatic Quillers OVER 10,000 RPM

For winding fine cotton, spun synthetics, filament rayon and nylon, etc. with automatic pinboard attachment or wide belt inspection conveyor, or bobbin stacker.

Production up to 2500 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.

For more data, circle A-82 on Reader Service Card

A revolutionary concept in yarn manufacture...

the ROCKFORD MANU

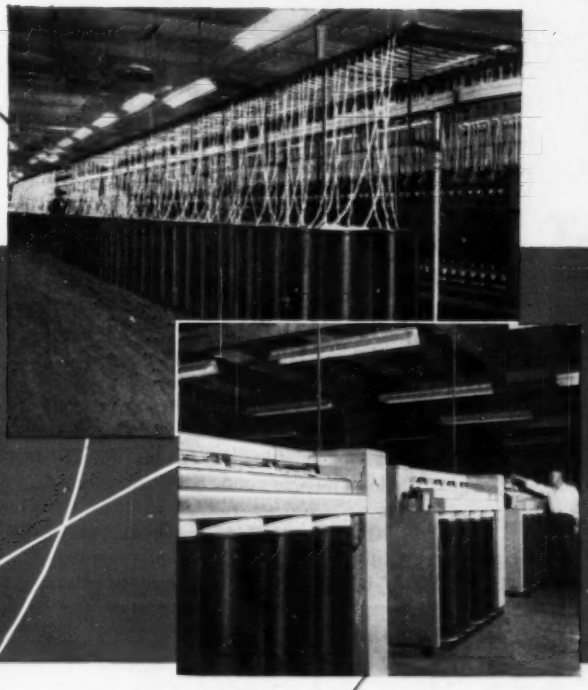
An outstanding SACO-LOWELL Sliver-Spin Installation which increased production with less machinery and lower overhead.

Opening quality was improved by the application of Feed Regulators and High-Speed Combs to the Feeders, and re-conditioning the remainder of the opening machinery. Filters were added to both the opening line and pickers to take care of the dust and fly inherent in the type of stock being processed.

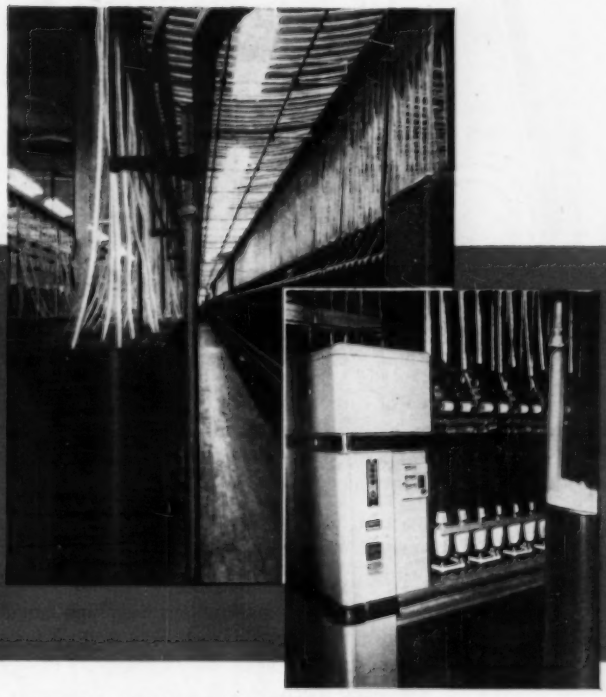
NEW 18" x 42" SACO-LOWELL ANTI-FRICTION CARD COILERS deliver 43 pounds per can to the Versa-matic Crawing.

EXTENDED CREELS PERMIT using creels with 10 ends of 60 grain card sliver per delivery of VERSA-MATIC. Signal lights, integrated with the stop motions, pinpoint location of broken ends, indicate empty cans and sources of frame stoppage.

FACTURING COMPANY STORY



THESE SLIVER SPIN GWALTNEY FRAMES are fed by 12 deliveries of twin-strand Versa-matic 15″ x 42″ cans. Each contains two separate coils of 55 grain sliver. Only one process of drawing is required. The special drafting system developed for sliver spin permits using drafts of over 52 for some counts.



THE 15 GWALTNEY SLIVER SPIN FRAMES, totaling 3,600 spindles, have produced over 74,000 pounds of 2's — 8's yarn in a single 3-shift week. With Sliver-Spin there is no roving process at all.

A close-up view of one of the **NEW 4½″ GAUGE GWALTNEY SLIVER SPINNING FRAMES** which spin counts ranging from 2's to 8's for the braiding of cord.

This installation is a successful approach to the concept of spinning direct from sliver. It inaugurates a new era in modern yarn manufacture which will tear down the barriers to profitable mill operation. The Rockford Manufacturing Company installation is the indisputable proof that Saco-Lowell technical achievements in machinery when combined with progressive "look to the future" mill management can increase production and spin better yarn with less machinery and at lower operating costs. The complete Rockford story is available in Bulletin form, write for your free copy. Better still, have a Saco-Lowell Sales Engineer prepare a Sliver-Spin program where applicable for your mill — there's no obligation.

THE STANDARD OF QUALITY AND PERFORMANCE Since 1813

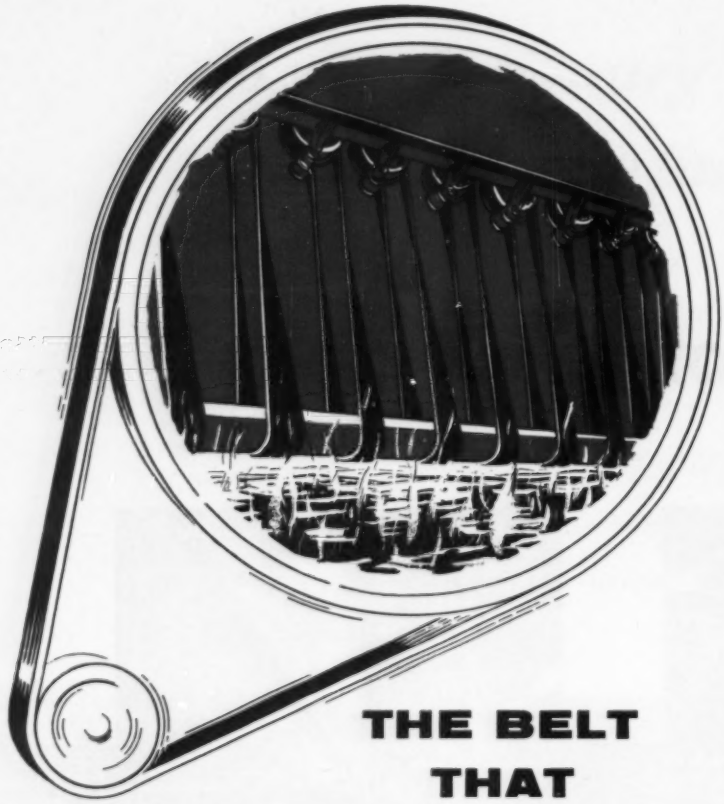
SACO-LOWELL TEXTILE MACHINERY DIVISION

SACO-LOWELL SHOPS

Executive & Sales Offices — EASLEY, S. C.

Branch Sales Offices — ATLANTA, GA., BOSTON, MASS., CHARLOTTE & GREENSBORO, N. C.

For more data, circle A-83 on Reader Service Card



THE BELT THAT RESISTS CORROSION

Scores of case histories prove that Texalon, the all-synthetic belting by Rhoads resists deterioration under wet or corrosive conditions — moisture, salts, greases, many solvents and other industrial chemicals.

You'll get more productive hours from Texalon in many applications for power transmission, carrier tapes or light conveyors. It springs without stretch, rarely needs shortening.

Texalon can be used on small pulleys with high belt speeds and high pulley ratios. Works well on both short and fixed center drives. Easily made endless on the job by untrained mechanics in a matter of minutes.

Belt widths up to 24". Write for bulletin to J. E. Rhoads & Sons, Wilmington 99, Delaware.

Typical Texalon Applications

WOOL PICKER . . . Machine sprays oil. Texalon installed to eliminate frequent belt shortening. Now in operation 18 months without a single adjustment for tension.

SPINDLE TAPES . . . Texalon replaced cotton and woven nylon tapes in rug mill. Reduced maintenance due to longer life. Better product because of consistent spindle speeds, no stretch, no oil absorption.

MACHINE DRIVES . . . Modernization program demanded increased machine speeds in textile mill. Texalon permits greater speeds, greater capacity from existing machines.

RHOADS

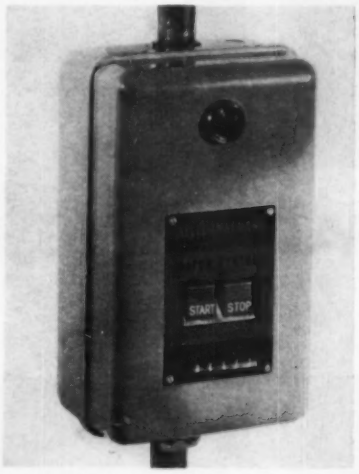
Where the Job Selects the Belt . . . Since 1702

For more data, circle A-84 on Reader Service Card

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 137

Motor Starters



A line of 0 to 4 contactors in unitive construction are available from Allis-Chalmers Mfg. Co., 1056 S. 70th St., Milwaukee 1, Wis. A full range of standard, special-design, and accessory control devices are available in these sizes for applications from 110 to 600 v. for fractional to 200-hp. motors.

The glass-filled molded contact block offers high resistance to arcing and mechanical shock damage. The molding material is practically impervious to moisture and fungus. Silver-cadmium-oxide contacts minimize erosion.

Adequate working space for easy wiring and modification is provided in all enclosures. The range includes manual and magnetic across-the-line types.

Circle T-23 on Reader-Service Card

Heddle for Leno Weaves

A flat-steel heddle, Stehedco Duplex Doup, for leno weaves has been introduced by Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia 32, Pa.

The heddle provides complete freedom of movement for warp ends. Even the friction usually caused by the needle rubbing between standards is greatly reduced by a welded construction that provides a positive opening for the needle.

The parallel legs of the standards set freely between the spread legs of the needle to completely eliminate re-

From Big Ones like these →

Bemis Tite-Fit Tubing—spiral-sewn burlap tubing with 2-way stretch; sturdy, economical, fast to use.

Bemis Waterproof laminated roll and carpet covers, the sturdiest, economical protection.

to small ones like this →

Bemis Plastic Packaging gives showcase display. Can be beautifully printed with your sales message.

Bemis is the Textile Industry's top source of packaging materials

WHATEVER YOUR NEEDS . . .

Waterproof bale and roll covers* and bale caps*—Sturdy paper covers* for textile rolls and carpets—Burlap Tite-Fit Tubing®*—Burlap piece goods—Flip-Close®* and other fast-selling polyethylene packages for soft goods—Soft-finish cotton threads and twines . . .

Bemis is your top, dependable source. Ask for the *full* story about the help Bemis can give you.

**Bemis developed these. It's natural we know how to make them better.*

Bemis

General Offices—408 Pine Street, St. Louis 2 • Sales Offices In Principal Cities

NEW FAIRBANKS-MORSE

Portable Platform Scale

MODERN FUNCTIONAL STYLING

- reads quickly and clearly under all lighting conditions!
- moves easily through narrower aisles!
- stays accurate and sensitive under roughest conditions!

Designed for your most exacting requirements—built for years of heavy-duty use—this new Fairbanks-Morse Model 1124A Portable Platform Scale helps speed your operations through faster, more accurate weighing!

Note the big, clear beam design that promotes quicker reading—the new square weights for easier handling! Check the new concealed wheels, the compact overall width—important for fast handling in congested areas. Notice the absence of check rods, to eliminate binding. From top to bottom this is a handsome, durable scale designed to use—built to last—a worthy successor to the hundreds of thousands of famous Model 1124 Scales proven throughout industry! Capacity 1000 lbs. Write Fairbanks, Morse & Co., 600 South Michigan Avenue, Chicago 5, Illinois, for new Model 1124A Catalog.

See Sweet's Plant Engineering File for full line of F-M Scales.

FAIRBANKS-MORSE

a name worth remembering when you want the BEST

SCALES • PUMPS • DIESEL, DUAL FUEL AND GAS ENGINES • ELECTRIC MOTORS
GENERATORS • COMPRESSORS • MAGNETOS • HOME WATER SYSTEMS

sistance to the shedding movement, excessive wear, and skipping in the woven pattern.

Circle T-24 on Reader-Service Card

Spinning Ring

An improved Kryton spinning ring that permits satisfactory traveler speeds of 7,000 to 8,000 ft. per min. has been announced by Whitin Machine Works, Whitinsville, Mass.

The ring is characterized by a new shape and finish and can be broken in within 120 hrs. or less.

Circle T-25 on Reader-Service Card

Noncongealing Starches

A series of gums produced by the acetylization of corn starch has been marketed by A. E. Staley Mfg. Co., Decatur 60, Ill.

The Miralloid type is recommended for slashing cotton, woolen, and worsted yarns, or blends of these fibers with man-made fibers.

The gums cook quickly to form solutions of stable viscosity that are resistant to reheating and ageing. Sizes made from the gums work well at various homogenizer pressures and have excellent all-around working properties.

Circle T-26 on Reader-Service Card

Scaffold Casters

A series of double-lock scaffold casters that assures safe handling of mobile equipment is being made by Faultless Caster Corp., 1521 N. Garvin St., Evansville 7, Ind.

These stem-type casters, CL900 series, have a simultaneous locking device that prevents both rolling and swiveling. They are made with 5-, 6-, and 8-in. wheels, which come in eight different materials to meet the requirements of any floor surface or operating condition.

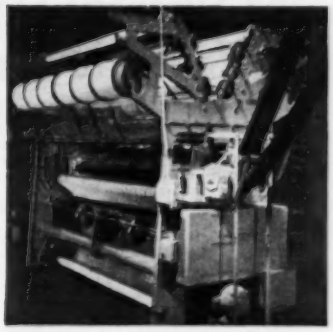
Circle T-27 on Reader-Service Card

Traveler and Gear Testers

Two West Point Mfg. Co. testing machines have been added to its line of standard instruments by Custom Scientific Instruments, Inc., Kearney, N. J.

A traveler-hardness tester breaks travelers between its jaws, and the distance between the jaws when the break

For more data, circle A-86 on Reader Service Card



There's no limit to the lace patterns with the NEW KIDDE 24 BAR RASCHEL KNITTER

Look at the lace in the picture. Every one of those intricate and varied patterns can be made on a single machine . . . Kidde's new 24 bar knitter. Look again at the quality of the lace . . . at the fine detail and the clear outlining of the pattern. That's quality lace turned out at moderate cost.

This new addition to Kidde's line of Raschel knitters is built to operate with 24 bars . . . but can be used with 14 or 18 for less intricate patterns. It turns the lace out fast, too . . . up to 300 courses per minute.

Like all Kidde machines, the new 24 bar knitter is simple, accessible and easy to work on. Equally important, it is ruggedly built to withstand round-the-clock, high speed operation. Write to Kidde for full information.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

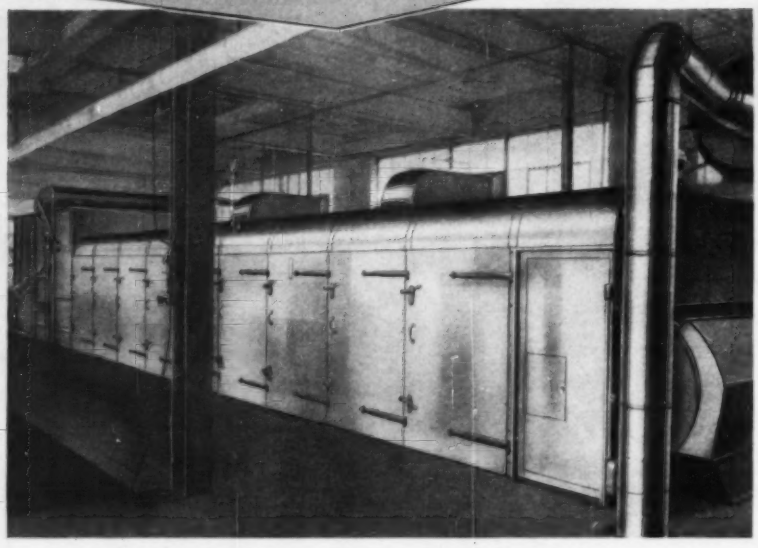
Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

For more data, circle A-87 on Reader Service Card

How to Cut Costs in Fibre Processing



The SARGENT System...

Fully Automatic Handling of Natural and Synthetic Staple from Dye Kettle or Washer to Card.

Delivers uniformly dried, lofty stock at high volume rate. Releases manpower for other work. Better than 1,000 lbs. per hour produced continuously, day in, day out. Installations have cut processing costs better than one-third.
This highly efficient, economical Sargent-designed system has only five units:

1. Rotary type Wet Feeder takes air-blown wet fibres from the dyehouse, feeds them to squeeze roll machine. Has ball-bearing main cylinder with stainless steel teeth, a rotary comb, two heavy rubber aprons — one to feed fibre to main cylinder, the other to deliver fibres to nip of squeeze rolls.
2. Extractor has sectional rubber ring roll, hammered steel bottom roll with fine knurl. Pneumatic loading, two air cylinders, control panel and indicating dial. Working at 80 lbs. pressure estimated air consumption is 4 cfm.
3. Stock Fan and Cyclone Condensor. Stock fan takes fibres from extractor, delivers them to cyclone condensor mounted above hopper of dryer feed, opening fibres and conditioning them for even, smooth delivery to dryer.
4. Rotary Feeder delivers even layer of fluffed fibres to dryer conveyor. Designed to effect a semi-combing action, eliminating matted bunches for more uniform drying, fewer neps at card.
5. Dryer with Blow-Up Section. Air-flow is down through traveling stock, with up-draft at blow-up section, midway of dryer. A highly efficient way to redistribute fibres evenly over stainless steel perforated flight conveyor and to even out moisture content of all fibres. Equipped with air-operated recording type temperature controls complete with steam control valves and air filter. These dryers are designed for easiest cleanout, fastest installation and highest operating economy of any dryer on the market.

Every machine in the system boasts Sargent's rugged construction; with simplicity of design, minimum maintenance, dependable, steady performance. Here is a system to save you money, man-power, time. Let us give you complete details.

C. G. SARGENT'S SONS CORPORATION
Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA • CINCINNATI • ATLANTA • CHARLOTTE • HOUSTON • CHICAGO • DETROIT • TORONTO

occurs is read visually on a dial. By breaking 25 to 50 travelers from a given lot, it is possible to determine the average opening between the horns at the time of the break. This reading is a direct indication of the average hardness of the traveler.

The other machine is used to test gear run-out that causes variations in angular velocity of the rolls and subsequent variation in stock.

The unit consists of a cast base on which two gear-stud bases are mounted. One is a fixed base carrying a master gear; the other is a sliding base for the test gear. The test gear is pushed against the master gear and slowly turned while run-out is read directly on a dial.

Circle T-28 on Reader-Service Card

Scouring Apron

A slat-type apron for use in scouring trains in woolen mills has been introduced by Robert A. Main & Sons, Inc., 257 Pascack Rd., Paramus, N. J.

For extra-long life, the apron is made with slats mounted on heat-treated and forged chains and the slats are constructed of synthetic material that will not warp under heat or wet acid conditions. The slats are very smooth, and wool fibers will not cling to them.

The apron, available in a variety of lengths and widths, is said to outwear cast-chain aprons with wooden slats.

Circle T-29 on Reader-Service Card

Lubricant-Pump Support

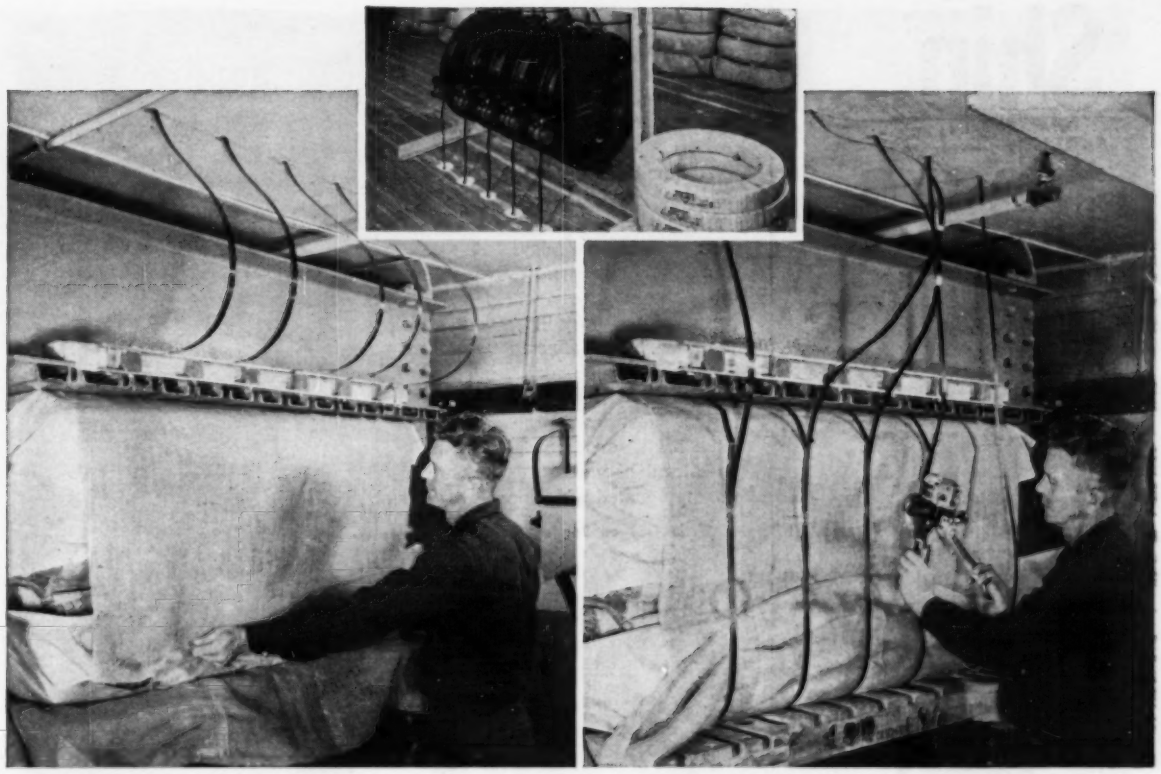
A wall bracket to hold a lubricant pump off the floor while drums are being changed has been developed by Lincoln Engineering Co., 5701 Natural Bridge Blvd., St. Louis 20, Mo.

The bracket is made of 16-gauge sheet steel and is zinc plated to resist corrosion. It eliminates the need for pump elevators or hoists since the operator merely hooks the drum-cover flange on the bracket while he slides in a fresh drum of lubricant.

And because the pump tube is held above the floor, it is not contaminated by dirt. The bracket includes two mounting holes, top and bottom, to be secured to any surface with 5/16-in.-dia. bolts or screws.

Circle T-30 on Reader-Service Card

CONTINUED ON PAGE 156



Strapping is fed from dispensers in room above press (inset). A magnetized bar holds the straps in position while bale is readied.

Signode's exclusive Model SFC tool tensions the strapping, feeds seals from magazine, and crimps them. Straps are severed at the seal. No waste strap.

Signode way produces denser bales and reduces strap use by 17%

These before and after photographs show clearly the improved density and appearance of bales.

Here's an example of a simple and inexpensive answer to a packaging problem. Waste—which was part of the former cut-to-length strapping method—was eliminated, with a 17% saving in the amount of strapping used. Bales are better looking. Their increased density saves about 7% of valuable space in storage and shipment. The entire strapping operation is simplified, goes easier and faster.

Why not let a Signode man take a new look at your packaging and shipping operation. He has an eye for savings, specialized knowledge of textile applications, and a complete line of strapping tools and machines at his disposal. Call him today, or write:

SIGNODE

First in steel strapping

SIGNODE STEEL STRAPPING CO.

2642 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

For more data, circle A-105 on Reader Service Card

Ship fibers fabrics yarns

to principal
Textile Centers of the
Eastern Seaboard and the
Midwest,

VIA

TRUCKING
McLEAN
COMPANY

Our 25th Year of Service 1934-1959

"We pull for Industry"

TEXTILE DIVISION OFFICES
TO SERVE YOU—

- Baltimore
- Boston
- Chicago
- New York
- Philadelphia

For "know-how" service on truck loads *or less*, call McLean today, or write Dept. A, Box 213, Winston-Salem, N.C.

McLean also manages and operates Hayes Freight Lines, Inc., serving the Central States

Circle A-90 on Reader Service Card

Liquid-Level Controller

A probe-type liquid-level controller with either single or dual fittings is being manufactured by Cutler-Hammer, Inc., 562 N. 12th St., Milwaukee 1, Wis.

With extensions either 1, 3, or 5 ft. long, the probe gives complete liquid-level control when it's used with electronic or transistor relays.

The probes have no moving parts; and as a result, they will not fail to operate from sticky floats. In addition, they aren't affected by normal changes in temperature, pressure, or consistency of liquids.

Other features are stainless-steel metal parts, neoprene-rubber splash hoods, and phenolic brushing insulators impregnated with silicone varnish.

Circle T-31 on Reader-Service Card

Industrial Cleaner

PN-700 is recommended for cleaning floors, metal surfaces, tile, wood, glass, or concrete by Service Industries, 2103-07 E. Somerset St., Philadelphia 34, Pa.

Circle T-32 on Reader-Service Card

Dyestuff Intermediates

O-Chloraniline, p-Chloraniline, m-Toluidine, and b-acid are available from Aceto Chemical Co., Inc., 40-40 Lawrence St., Flushing 54, N. Y.

Circle T-33 on Reader-Service Card

High-Purity Indicators

Methyl Violet, Thymol Blue, and Quinaldine Red are offered in solutions of organic solvents for non-aqueous titrations by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

Circle T-34 on Reader-Service Card

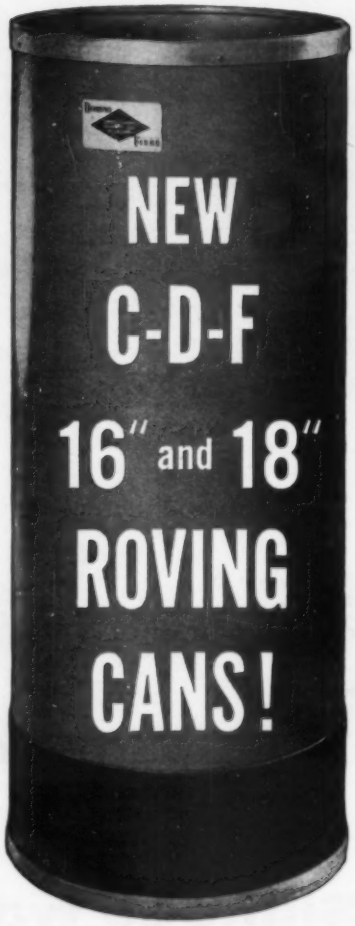
Sieve Shaker

A variable-speed sieve shaker that can accommodate a stack of eight sieves has been announced by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

Circle T-35 on Reader-Service Card

Peroxide Lamp

Hydrogen peroxide of 75% active material can be safely handled by a positive displacement rotary vacuum



SEAMLESS!
SNAG-FREE!

Now you can get Diamond Fibre Roving Cans in the big 16" and 18" diameters from regular stock at the Spartanburg plant-warehouse.

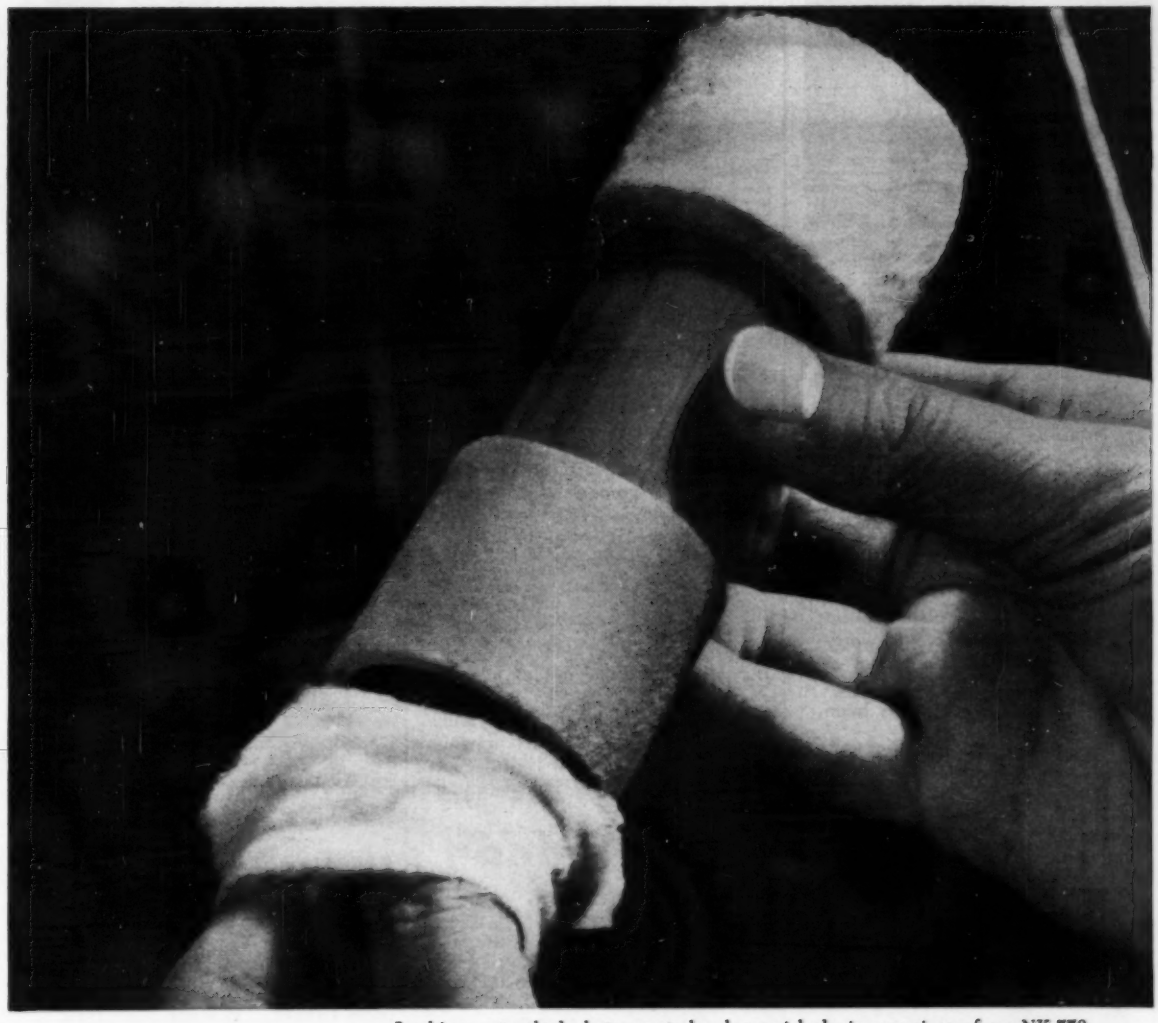
Static-free rolled fibre top rim for running synthetics; one-piece steel top rim; or swedged top rim—these meet all roving requirements.

CDF Diamond Fibre Roving Cans are smooth, strong, long-lived. Their interior surface, like porcelain, resists cracking and softening—won't snag yarns.

Make the CDF Spartanburg warehouse (834 Hayne Street, Spartanburg, S.C.—Tel. 3-6397) your headquarters for fibre and Celoron loom parts, gears, trucks, and mill boxes. Call Spartanburg or write for CDF Receptacles Catalog.

CDF **CONTINENTAL-DIAMOND FIBRE**
A Subsidiary of The Budd Company
Newark 55, Del.

Circle A-91 on Reader Service Card



In this unretouched photo, waste has been picked—in one piece—from NK-770 cover on left-hand boss. Note smooth, unfrayed build-up of waste on other boss.

Reduce picking costs 50% or more with new Accotex clearer covers

You can make substantial labor savings and get superior cleaning performance and much longer life . . . at no increase in cost . . . by switching to Accotex NK-770, a new expanded rubber clearer cover developed by Armstrong.

NK-770 is soft and resilient. It can't pack down or fray. Waste builds up smoothly and uniformly across its finely textured surface. And the seamless construction of NK-770 assures tight adhesion to the boss for the life of the cover.

Clearers covered with NK-770 can be *picked on the frame*. Waste comes off in one piece, with a single quick motion of the hand. This eliminates mechanical cleaning methods and permits a substantial reduction in your picking crew.

With all these advantages, NK-770 covers cost no more than cloth materials. And they can be mounted in your own roll shop, giving you further savings in freight and handling expense.

Your Armstrong man will be glad to arrange for a test of NK-770 in your mill. Compare the performance of Accotex NK-770 with the covers you are now using. Armstrong Cork Company, 6906 Dauphin Street, Lancaster, Pennsylvania.

Armstrong TEXTILE SUPPLIES

For more data, circle A-92 on Reader Service Card

Your New Plant Should Be In...

Bristol's the Capital of This OLD Industrial Country

If you choose a plant site in Bristol you don't have to worry about the pioneering aspect of most moves South. Bristol is an old industrial center — has been for 50 years!

Here you'll find a community appreciative of industry. Here too you'll find industrial neighbors ready to share their experience and know-how with you.

Bristol has adequate, trained labor and a wealth of natural resources, the best transportation facilities and, most important, a selection of industrial sites ready for immediate occupancy. We'd like you to become a citizen of Bristol, Tenn.-Va. Won't you give us a chance?

Let Ford, Bacon & Davis Tell You the Whole Story

This nationally famous engineering firm has prepared an exhaustive analysis of Bristol's industrial potential. Write for your copy today—Dept. T659.

Bristol
INDUSTRIAL DEVELOPMENT BOARD
of the Twin Cities of
BRISTOL • TENN. - VA.

Circle A-93 on Reader Service Card

pump marketed by Eco Engineering Co., 12 New York Ave., Newark 1, N. J.

Circle T-36 on Reader-Service Card

Trolley

A four-wheel trolley for transferring materials weighing up to 500 lbs. over short distances is available from Rapids-Standard Co., Inc., Grand Rapids 2, Mich.

Circle T-37 on Reader-Service Card

Low-Temperature Units

A low-temperature environmental test chamber and a liquid nitrogen generator are offered by Instruments Div., Philips Electronics, Inc., 750 S. Fulton Ave., Mount Vernon, N. Y.

Circle T-38 on Reader-Service Card

Catalog Rack

A catolog storage rack that allows maximum storage capacity in minimum space is offered by Eldridge Co., 1017 Packard Bldg., Philadelphia 2, Pa.

Circle T-39 on Reader-Service Card

Strapping Tape

Development of a waterproof pressure-sensitive strapping tape for heavy-duty packaging is announced by Permacel, New Brunswick, N. J.

Circle T-40 on Reader-Service Card

Automatic Cutter

Materials up to 24 ins. wide can be cut into lengths up to 96 ins. or in infinitely variable increments up to 8 ins. long in the Jaco Autogil cutters available from Hobbs Mfg. Co., 26 Salisbury St., Worcester, Mass.

Circle T-41 on Reader-Service Card

Disposable Chemical Drums

Acids or other corrosive chemicals can be safely handled in a polyethylene-lined 5-gal. drum marketed by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

Circle T-42 on Reader-Service Card

CONTINUED ON PAGE 160

your no. 1 source

GARLAND

for

LOOM PICKERS . . . RAWHIDE and PLASTIC

BUNTERS

LEATHERS

ROD LUBE

Send for complete information on ALL Garland textile products. Ask for special data on new Garland plastic loom pickers.

Garland MANUFACTURING CO

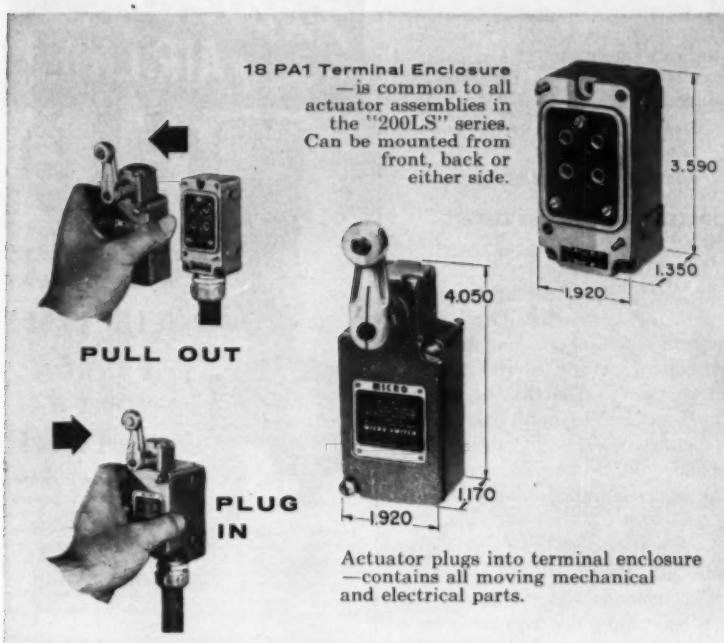
Also manufacturers of Nylon and Rawhide Hammers and Mallets.

50 WATER STREET • SACO, MAINE

Circle A-94 on Reader Service Card

H HONEYWELL

MICRO SWITCH Precision Switches



201LS3 Adjustable Arm Rotary Actuator Switch
208LS1 Coil Spring Actuator Switch
201LS10 Rod Actuator Switch
205LS1 Roller Plunger Actuator Switch
202LS1 Push Plunger Actuator Switch
201LS1 Roller Arm Actuator Switch
203LS1 Side Roller Plunger Actuator Switch
204LS1 Side Plunger Actuator Switch

Sealed "Plug-in Limit" switches insure against costly downtime

Now available in 8 actuator types

Here's a sealed precision limit switch that can be replaced complete in 20 seconds! Downtime is all but eliminated!

A "Plug-in Limit" switch, in any of eight actuator styles, plugs into the terminal enclosure like a radio tube . . . is precisely positioned by dowel pins and secured by two No. 10 screws. Together, the two parts form a dependable switch assembly. sealed against oil, water, dirt and dust.

The "Plug-in Limit" is two-circuit double throw. Electrical rating is 10 amps. 120, 240, 480 vac; ½ H.P. 120 vac; 1 H.P. 240 vac; 0.8 amp. 115 vdc; 0.4 amp. 230 vdc; 0.1 amp. 550 vdc. Pilot duty rating is 600 vac max. Meets NEMA Industrial Control Standards.

For details of the "200LS" series, write or call the MICRO SWITCH branch office or authorized distributor near you, or send for Catalog 84.

MICRO SWITCH . . . FREEPORT, ILLINOIS
A division of Honeywell
In Canada: Honeywell Controls Limited, Toronto 17, Ontario

H HONEYWELL **Honeywell**
MICRO SWITCH Precision Switches

DURANT

HEAVY-DUTY PREDETERMINED COUNTER

ROTARY MODEL 5-R-7-Q-R with lever reset. Also stroke model. Both available with totalizer.

- **LONGEST LIFE IN HEAVY DUTY TEXTILE APPLICATION**
  Specifically designed for heavy duty textile applications such as warpers, slashers, sliver winders where uniform lengths are mandatory. This rugged predetermined counter is a precision instrument with a built-in safety margin for the most severe operating conditions. Proven through years of field usage, it will give the longest possible service with minimum maintenance.
- **TRUE COUNT INDICATED AS RUN IS BEING MADE**
  It will measure yardage at any predetermined setting, stop the equipment to eliminate overruns and allow maximum production without waste. Positive locking assures reliable counting at all times; the true count is indicated as the run is progressing.
- **QUICK RESET LEVER**
  Available with wing nut or quick lever reset for fast positive action.
- **HIGHEST QUALITY MATERIALS**
  The Durant will outlive any comparable counter. Heavy 5/16" drive shaft is accurate-ground and polished steel. Heavy duty double worm drive provides longer count life.
- **NO SQUINT; NO GUESS**
  Larger figures 11/32" high are bold black on white, easy to read at a glance. Three leads permit use with open or closed circuit. Rugged case with snap-down top and piano-type hinge keeps out dust and lint.

Send for Catalog 45

DURANT MANUFACTURING COMPANY

1931 N. Buffum Street, Milwaukee 1, Wisconsin | 31 Thurbers Avenue, Providence 5, R. I.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

Circle A-96 on Reader Service Card

Remote Control

A motor-operated mechanism that makes possible both remote control and automatic transfer for systems with molded-case circuit breakers has been introduced by I-T-E Circuit Breaker Co., 1900 Hamilton St., Philadelphia 30, Pa.

Circle T-43 on Reader-Service Card

POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 105

strain on interpersonal relations in a department when Joe Doakes, the victim of a painful accident not of his own making, returns to work after his recuperation to find that he is a villain whose "carelessness" has deprived his fellow workers of cutlery sets, cameras, and electric toasters. Awards work better if scapegoating is avoided.

5. **Attention-getters.** These are the visual aids—the charts and barometers and scoreboards and the posted messages exhorting the employee to be more careful and reminding him that safety is a duty he owes to himself and to his fellow workers.

The reminders are most useful if they are posted at the point where the hazard exists and specifically refer to the hazard. They tend to be less effective in producing alertness, though they may create a generally favorable attitude, when they are posted at the mill gate or at some other location remote from the place of danger. Even at their best, their effectiveness may fade with the passage of time as they become "part of the furniture."

Experienced supervisors realize, fortunately, that the motivational techniques are a help to them, a supplement of their own efforts, rather than a complete program. They know they must be specific in their efforts. They must continuously analyze the accidents occurring in their departments in order to uncover specific causes and to make specific corrections.

This activity is in addition to repeated inspections. They realize that the best correction is to make the operation accidentproof. If that is not possible, the next best approach is to train the employee, as part of the development of job skill, in job methods that incorporate safety along with efficiency and quality.

These are engineering and training matters and the core of the problem

GREATER PROTECTION to your AIR LINE!

M-B

AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 and TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

M-B PRODUCTS
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DETROIT 3, MICHIGAN

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A BASIC PRODUCER FROM MINE TO FINISHED PRODUCT

SULFURIC ACID

TENNESSEE CORPORATION

The Southeast's Leading Sulfuric Acid Supplier

Our complete control of raw materials from mine to finished product allows our total independence from elemental sulfur and enables **TENNESSEE CORPORATION** to accommodate and ship large tonnages of acid quickly and with minimum notice.

The sulfur contained in the ore we process yields Virgin Sulfuric Acid of highest quality free from organic matter, very low in iron, and in no way contaminated from regenerated or spent sulfuric acid sources.

We produce all commercial grades and strengths of Sulfuric Acid from 60° Baume through the various Oleums.

QUALITY
RELIABILITY
ABUNDANCE
RAPID SERVICE
TECHNICAL ASSISTANCE
VARIETY OF GRADES AND STRENGTHS

We would welcome the opportunity to tell you our story—Call JAckson 3-5024, Atlanta, Ga. or write—

TC TENNESSEE CORPORATION
617-639 Grant Building, Atlanta, Georgia

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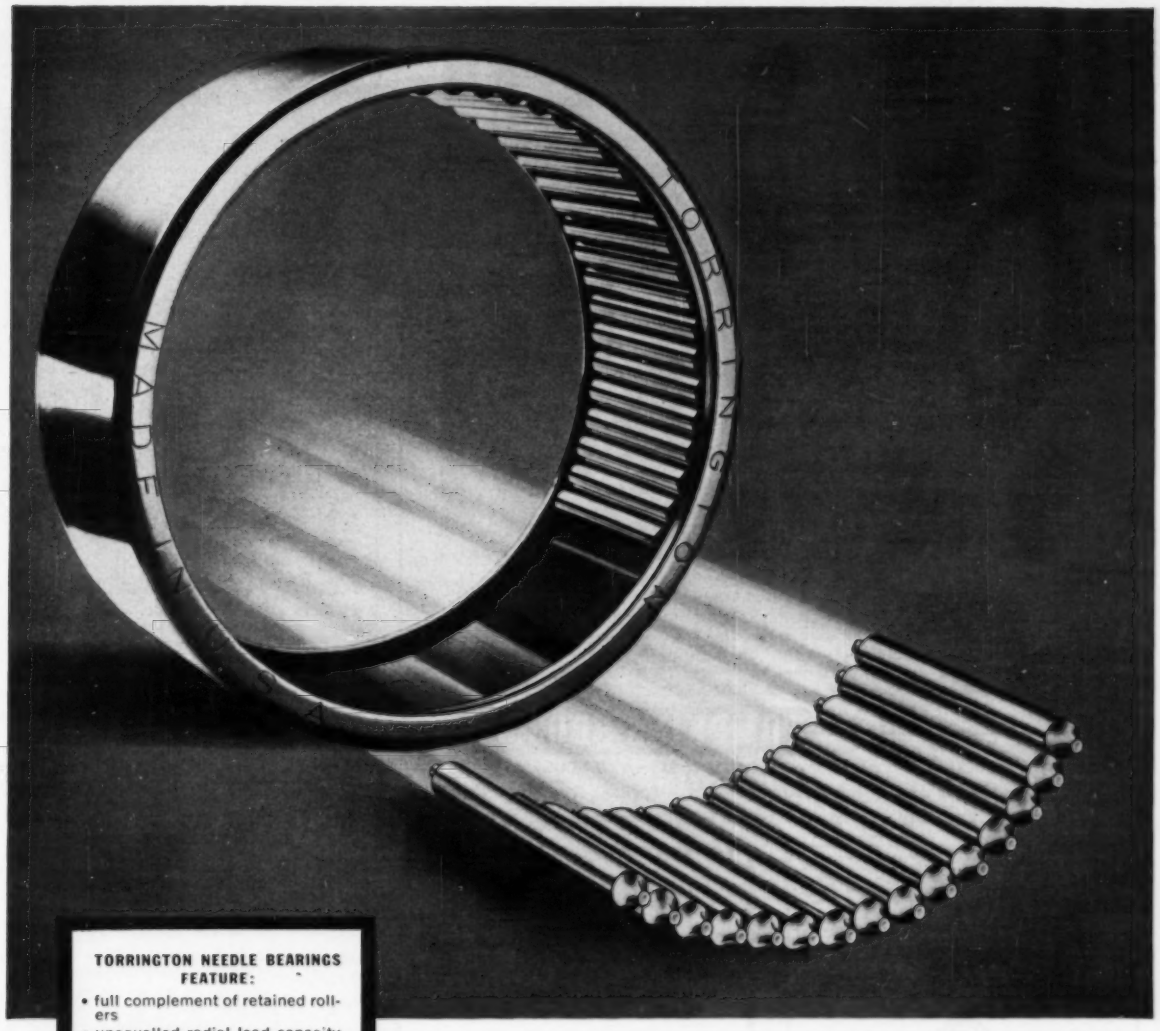
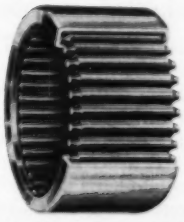


TORRINGTON NEEDLE BEARINGS FEATURE:

- full complement of retained rollers
- unequalled radial load capacity
- low coefficient of starting and running friction
- low unit cost
- long service life
- compactness and light weight
- runs directly on hardened shafts
- permits use of larger and stiffer shafts



Here's Why Torrington Needle Bearings Provide Maximum Radial Load Capacity

The Torrington Needle Bearing's full complement of small diameter rollers provides the largest possible number of bearing contact lines in the load zone.

This feature gives Needle Bearings a higher radial load capacity than any other bearing of comparable size. Precision rollers ensure smooth anti-friction performance with low coefficient of starting and running friction, to match this unequalled capacity. Rollers are positively retained by the turned-in lips of the outer shell, permitting simple, economical installation and assembly.

Torrington experience spans twenty years in design and application of Needle Bearings to equipment of all types. This experience is at your disposal to help you secure the ultimate in performance built into every Torrington Needle Bearing. **The Torrington Company, Torrington, Conn.—and South Bend 21, Ind.**

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • BALL • NEEDLE ROLLERS • THRUST

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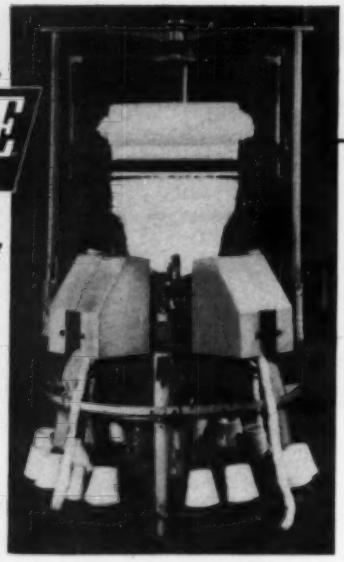
yes, Tompkins versatility includes...

HIGH PILE FABRIC

at the Industry's Lowest Cost!

Here's the compact, efficient machine you need for money-making, top-quality production of high pile fabric . . .

It's the new TOMPKINS S-1 JUNIOR with carding units to produce high pile material in a variety of sizes, weights and sliver content!



Available in two models with cylinder interchangeability from 12" to 28" (S-1 Jr.) and 24" to 38" (S-1 Sr.), this knitter gives you the proven quality and economy of a fully modern Tompkins circular spring needle machine. Model shown has four high pile cards and feeds, each with stop motion control, and triple stop motions in the knitting mechanism. Features a patented, gearless drive and vacuum air cleaner. *It will pay you to get full information — write, phone or stop in now . . .*

TOMPKINS BROS. CO.

623 ONEIDA ST. • SYRACUSE 4, N. Y.

Circular Spring and Latch Needle Knitting Machinery...Since 1846

For more data, circle A-100 on Reader Service Card

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Textile Mills & Finishing Plants
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85 MILLS
NOW PRODUCING MORE HIGH QUALITY LAPS
WITH THE
LONG
PNEUMATIC LAP CONTROL SYSTEM

Patent No. 2,871,519 has been issued on the calender section controls, other U.S. and foreign patents on this and all other pneumatic devices produced by L&H are now pending.

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Get the full story on all our pneumatic systems, especially New Pneumatic Clutch for Pickers.

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Address foreign inquiries to:
PLATT BROS. (SALES), LTD.
Oldham, England

Circle A-102 on Reader Service Card

(though not the entire answer to this complex business). Motivation helps, but only in those aspects of safety in which the employee exercises some control. It cannot stand alone as a complete safety program.

KAE REPORT

CONTINUED FROM PAGE 48

Fletcher Works showed a washing and extracting machine based on a centrifugal extractor with automatic cycling of wash, rinse, and extraction periods.

Yarns Take Spotlight

Man-made fibers, with heavy emphasis on texturizing by any and all means so far developed, shared importance with new or improved machinery at this year's show.

Opportunities for the creation of surface effects and the development of a luxurious hand that are offered by the multitude of yarns now available are being pushed by knitters who see their markets capable of considerable expansion.

The increasing trend toward casual clothing is opening up a bigger market for men's wear.

There is a current flair for bulky sweaters made from bulked Orlon in 6- and 10-den. weights. Orlon holds a major share of the market for sweaters at present; but newer fibers such as Darvan, Creslan, and Zefran are coming contenders.

There is a trend toward blending textured filament yarns with spun yarns and mixing fibers to get cross-dyed effects.

Orlon chenille yarns for outerwear were among popular newcomers, and among the newest yarns shown was a texturized spun Orlon for outerwear.

Variations Are Limitless

Mixtures of wool with stretch-nylon yarns created some interest, as well as similar yarns made from stretch nylon and acetate.

One of the newest innovations was a bulked Arnel yarn. Creslan, according to one large dyer, looks very good because of its dyeability with wool colors. Darvan has been improved as to dyeability so that union shades with wool are possible.

Textured yarns are being tried in tricot fabrics as well as in woven goods. The newer, faster production methods for these yarns have come along just in time to satisfy knitters' increasing demand.

A view of the Barber-Colman display at the American Textile Machinery Exhibition in 1954. The machine in the foreground is drawing-in a complicated stripe pattern.

BARBER COLMAN

ATLANTIC CITY, N. J.
MAY 23-27, 1960

It is not too early to plan...

Less than a year from now, the next great American Textile Machinery Exhibition will take place at Atlantic City, in the same huge Auditorium which has housed it on two previous occasions. *It is not too early now for you to start planning to be there.* Barber-Colman will, of course, be among the exhibitors — with operating examples of all the latest and most interesting models of Barber-Colman machines. You will find machines here that can improve the quality of your products, increase the efficiency of your manufacturing methods, and reduce your operating costs by significant amounts. You will have a chance to see these machines in actual operation demonstrating their capabilities on the yarns and goods for which they are designed. You will have a chance to talk with experienced men, who can discuss in detail the possible uses of Barber-Colman machines in your own mill. You will have a chance to ascertain the advantages and calculate the comparative costs of the new Barber-Colman ideas against your present methods. These valuable opportunities are planned for *your* benefit—so, start to plan *now* on being at Atlantic City next May.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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3 COST-CUTTING IDEAS for '59

Finding a way to increase production and reduce waste can often result in substantial savings. Take fabric guiders, for instance . . .

MECHO AIR GUIDERS

Here are three ideas that can pay off for you for years to come with these ingenious cost-cutters.

ELIMINATE FABRIC SPOILAGE
Mecho's gentle action and exclusive features eliminate double edges, spattering and other damage to fabric.

SPEED UP FABRIC PROCESSING
by adjusting Mecho's selvage finger tension to handle the lightest fabric or #8 duck at 1 to 400 ypm while in operation. It'll stay accurate within 1/8 inch.

REDUCE REPAIRS AND DOWN-TIME
with the simplicity of Mecho's precision design . . . no weights or linkages . . . nothing to get out of order.

If you aren't already enjoying these and other cost-cutting advantages of Mecho Air Guiders, why not check up now?

Send today for your free copy of the Mecho Air Guider Catalog.

THE Guider SPECIALTY COMPANY

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Standard Mill Supply Company
P.O. Box 1534
Providence 1, R. I.

Circle A-104 on Reader Service Card

Handling Stainless Steel to Combat Corrosion

There are approximately 37 standard grades of stainless steel. They all contain at least 11.5% chromium, often 7% or more nickel, and sometimes molybdenum, columbium, tantalum, titanium, and other materials.

Type 302 is the basic alloy of the group and is generally used because of its balance of properties that include good corrosion resistance, high strength, and durability. It has excellent resistance to nitric acid and other oxidizing agents.

On the other hand, it is less resistant to most acid-salt solutions; and heavy metal halide solutions such as $FeCl_3$ may cause pitting. Equipment made of Type 302 and operating in the sensitizing range or welded without subsequent annealing may be liable to intergranular attack if exposed to corrosive environment. Usually another type of stainless should be chosen to meet these conditions.

Type Variations Have Advantages

Variations of the basic Type 302 include Type 301, which has extremely high strength and excellent resistance to atmospheric corrosion; but it has less general corrosion resistance than Type 302. Further variations of basic Type 302 include Types 303 and 303 Se, which are free-machining grades.

High-temperature applications may occasionally call for Types 309 or 310, which contain higher amounts of chromium and nickel and are used for their scale-resisting properties and strength at elevated temperatures. The higher amount of alloying elements present in these types may increase their corrosion resistance somewhat; but if this requirement is the only one, molybdenum-bearing stainless steels are preferred.

11 Points To Watch

Certain conditions occurring during operation may affect the corrosion resistance of the equipment. Here are points to watch:

1. Avoid a concentration of corrosive agents, especially the halogen ions. Watch for stages in the process where accidental variations may occur in concentrations. Gravity, evaporation, condensation, temperature, or other forces may be the cause. Sufficient agitation of solutions helps.

2. Insure uniform oxygen or oxidizing solutions to maintain uniform passivity. Agitate solutions. Avoid pockets of stagnant liquid.

3. Keep the oxygen level high or eliminate it entirely. A high level of uniform oxygen concentration promotes passivity; on the other hand, complete elimination of oxygen reduces pitting in salt solutions since oxygen depolarizes passive-active cells.

4. In general, operate at the lowest temperature possible since pitting increases with higher temperatures. If the equipment is allowed to accidentally overheat, immediate damage may result. Since stainless steel has low conductivity, warping can occur. If the equipment is held in the sensitizing range, intergranular corrosion is possible. These abuses can be avoided by the addition of warning devices.

5. Increase the pH factor. Pitting is substantially reduced when the alkalinity of the solution is increased.

6. Add passivators or inhibitors to the solution. Most of the relatively few substances that will corrode stainless steel can be inhibited by this proper addition.

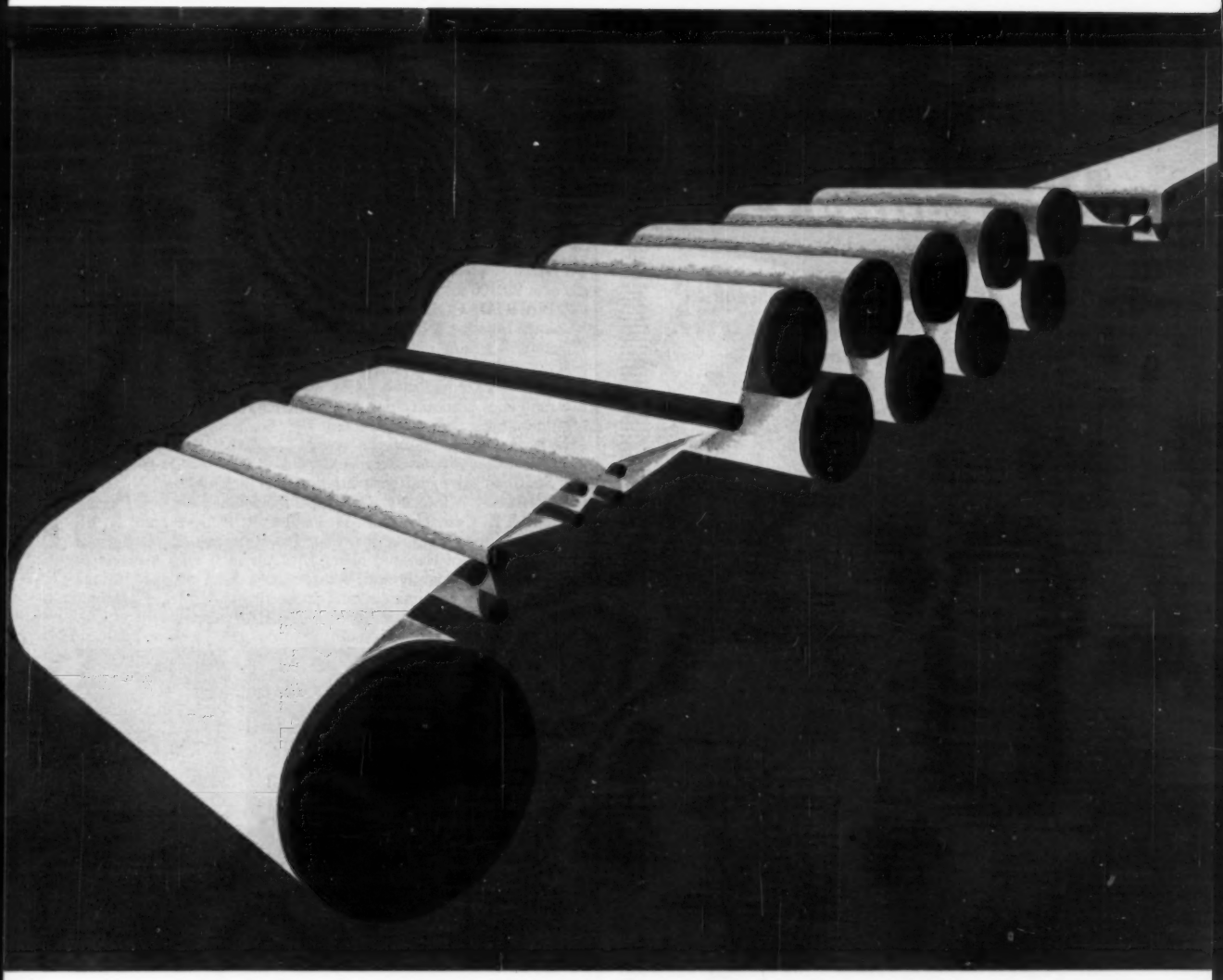
7. Reduce fretting by reducing relative motion. Mating surfaces should be slightly roughened for increased friction. Flanged sections should be tightly bolted to eliminate motion. Lubrication should be used where effective.

8. Watch for spots that may become work hardened in service. While this condition is unusual and requires severe cold working to produce an effect, these areas can be possible danger spots because cold-worked metals are more vulnerable to pitting.

9. Where fluid is moving, allow some air to enter the system to relieve local low-pressure areas, which is the cause of cavitation.

10. Avoid build-ups or deposits of material by frequent and regular cleaning.

11. Provide ready access to all parts of the equipment for cleaning. Screens, filters, and valves should be easy to remove. Openings and access plates should be as numerous as possible. All interior parts should be easily reached. *Committee of Stainless Steel Producers and American Iron and Steel Institute.*



The yarn path for BETTER loom beams runs through the Kidde-Johnson Slasher

Of course, you want tightly and evenly-packed loom beams. You want size evenly applied, with careful control of pick-up, and fast drying at regulated temperatures. You want controlled moisture content in the yarn after drying. You want equipment that's easy to maintain. The Kidde-Johnson Slasher meets your requirements perfectly. Here's why:

1. **Controlled tension**
2. **Rigidly supported loom beam**
3. **Fingertip calibration of stretch**
4. **Precise control of size level and temperature**
5. **Uniform application and penetration of size**
6. **Geared cylinder drive**
7. **High pressure, Teflon-coated cylinders**
8. **Stainless steel components**

Kidde makes the Slasher to suit your production requirements

The Kidde-Johnson Slasher will slash yarns of any fiber — filaments or spuns — from the finest count for delicate fabrics to the heaviest denier tire cord.

It is constructed to fit your requirements — for cotton system slashing, silk system slashing, or both.

Its production capacity can be expanded to meet future needs. Drying cylinders, single or combination quetsches can be added, head ends extended or widened.

For full information about complete new slasher installations as modernization of your present equipment, call PILGRIM 8-8100 or write . . .

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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The Laurel Leaf

BUSINESS MAGAZINE EDITION

VIDOL SOAP FLAKES

Vidol Flake Soap is the low titre member of the Laurel **quality** soap family. It is produced from the finest grade of distilled red oil (Oleic Acid), and tests approximately 12°C titre. Like all other Laurel products, it is made under conditions of rigid laboratory control which assure uniformity from lot to lot and trouble-free mill operations.

Vidol Flake Soap is used in a variety of applications, including boiling off, scouring, soaping off, dye leveling and stripping, and wool fulling. It is easily dissolved and, being of low titre, is free rinsing at low temperatures. It may be used successfully on cotton, wool, silk, nylon, Orlon, Dynel, Acrilan, Dacron, Vicara, rayon, acetate, etc. The results are excellent.

If you are looking for a high quality, low titre flake soap, we strongly urge you to investigate the plus values offered by Laurel VIDOL Flake Soap. We will be happy to send you a generous sample for your own use and testing.

Laurel Brand 50 YEARS OF SERVICE TO INDUSTRY 1909-1959

Laurel SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses: Paterson, N. J. Chattanooga, Tenn. Charlotte, N. C. Greenville, S. C.

NEWS ABOUT SUPPLIERS

ADELL CHEMICAL CO., Holyoke, Mass.—Has completed a new 90,000-sq.-ft. addition to its present plant. . . . **ALLIED CHEMICAL CORP.**, New York, N. Y.—Has acquired Harmon Colors, Haledon, N. J., from B. F. Goodrich Co. Harmon will operate as a unit of the National Aniline Div. Its general sales offices will remain in Haledon. . . . **AMERICAN AIR FILTER CO., INC.**, Louisville, Ky.—Has appointed J. W. Frazier manager of field-sales administration. . . . **AMERICAN ENKA CORP.**, Wilmington, Del.—Has elected W. G. Brady, Jr., president. He is also chairman of the board. . . . **AMERICAN PAPER TUBE CO.**, Woonsocket, R. I.—Has named J. O. Hodges to its Southern sales staff with headquarters in Charlotte, N. C. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has transferred N. E. Carr, J. Adrian, D. Fiedler, R. Ridgway, and R. M. Winters, Jr., to AviSun. Mr. Carr has been named manager of manufacturing of film and fibers. Mr. Adrian is sales manager of films; Messrs. Ridgway and Winters have been assigned to the film group in commercial development; and Mr. Fiedler is product manager of fibers in commercial development.

R. H. MEZGER (left) has been appointed district sales manager, Worcester, Mass., for Vickers, Inc. W. R. GOTSHALL (center) has been promoted to district sales manager for Continental-Diamond Fibre Corp., with headquarters in Indianapolis, Ind. DR. CHAPIN E. STEVENS (right) has been appointed director of commercial development for the Dyestuff & Chemical Div., General Aniline & Film Corp., New York, N. Y.

APPLETON MACHINE CO., Appleton, Wis.—Has named T. M. Stilp sales engineer. He will represent the firm in all sales divisions. . . . **H. W. BUTTERWORTH & SONS CO.**, Bethayres, Pa.—Has elected S. Brooks vice president in charge of sales. . . . **CELANESE CORP. OF AMERICA**, New York, N. Y.—has named J. T. Robert Brownridge business manager of the Charlotte Development Laboratories, Fibers Div. C. J. Kaemmerlen, Jr., has been named technical and economic-evaluation engineer, Fibers Div. . . . **CLINTON CORN PROCESSING CO.**, Clinton, Iowa—Has appointed G. H. Burns district manager, Philadelphia, Pa. . . . **CURTIS & MARBLE MACHINE CO.**, Worcester, Mass.—Has named H. W. Ball product engineer. . . . **DIAMOND ALKALI CO.**, Cleveland, Ohio—Will start building a new multimillion-dollar research center in Concord Township near Painesville, Ohio.

DIXON CORP., Bristol, R. I.—Has named S. W. Mathews sales representative for the company's spinning change-overs in New England and Canada. . . . **DODGE MFG. CORP.**, Mishawaka, Ind.—Has named Paul Keb district sales manager for North and South Carolina. Jack Stroobandt will become sales representative in this territory. Charles Curtis will handle sales in parts of Connecticut, Massachusetts, and New York, with headquarters in New York City. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Will start building a second plant for the manufacture of Mylar polyester film near Florence, S. C., at a cost of about $20 million. It is scheduled for completion in early 1961. The company has also reorganized the Textile Fibers Dept. and has consolidated the Research Div., the Manufacturing Technical Div., and the Textile- and Industrial-Products Research Div. into a single unit called the Technical Div.

FINETEX, INC., East Paterson, N. J.—Has named R. E.

For more data, circle A-106 on Reader Service Card

For more data, circle A-107 on Reader Service Card →

IN TENTER FRAMES

M&W MODULAR PRINCIPLE

Adapts Exactly to Your Needs

YOUR REQUIREMENTS are all we need to engineer our modular tenter frame components to meet *all* your processing with scientific exactness. You realize new efficiency and economy because you do not have to compromise—you get just what your processing requires.

HERE'S WHY:

1. M&W drive units are built in 5, 15, 50, 75, 100 hp. With these increments, intermediate horsepower requirements are easily accommodated—drive units are torqued to do the job. Hence, you don't "buy a 5-ton truck to carry a half-ton load", nor vice versa.

2. M&W tenter frames are built with all other components in proper proportion and in lengths from 2½ ft. to 200 ft., any desired width. In addition, we can readily design for all exceptional types of uses and special needs.

3. M&W tenter clips — many of them originated by us — are made in at least 15 different styles, further varied by types of metals used, pins, etc.

THE PRICE IS RIGHT You design your own tenter frame just by telling us your requirements. From there on you get M&W versatility, flexibility, engineering know-how—unmatched in the industry. Because we don't have to compromise by filling orders with a single machine model, you get proper design, properly powered—at a really reasonable cost. Write today!

93-9

MARSHALL and WILLIAMS CORPORATION
PROVIDENCE, R. I. GREENVILLE, S. C.
Canadian Representative:
RUDEL MACHINERY COMPANY LIMITED
Main Office: MONTREAL, QUEBEC.

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work... says "Mark-O-Merit" ®
moves *faster*
when you use...
Shamrocks

Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA—W. E. Petway, 723 Densley Drive, North Decatur, Ga., ME 6-3192; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST—Gene Daniels Sales Co., P. O. Box 846, La Puente, Calif., EDgewood 3-2116. Export Mgr.—R. A. Auerbach, Easton, Pa. Cable Address: "Natly."

SHAMROCK
canvas baskets • hampers • trucks

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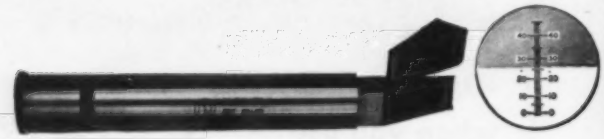
NEW REFRACTOMETER



Read the percent of solids (which generally means percent of size in yarn) at a glance!

Moderately priced. Distributed exclusively to the Textile Industry through:

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METALLIC CARD FLATS

1. Will reduce flat strips 40 to 60% without affecting the quality.
2. Requires no grinding.
3. Will card equally as well with metallic, hardened points, or conventional wire on cylinder.

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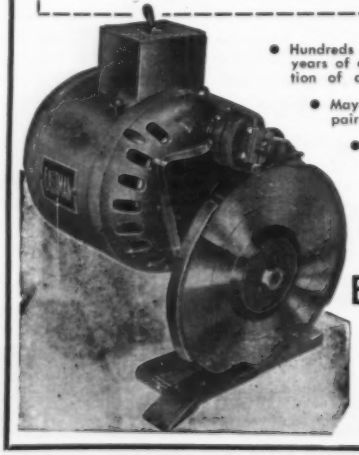
• for CONTINUOUS SELVEDGE-TRIMMING, CLOTH SLITTING,

or BOTH SIMULTANEOUSLY

EASTMAN model SMS

STATIONARY-MOUNTED

CLOTH SLITTER



- Hundreds in use. Backed by 58 years of experience in the production of cloth cutting machines.
- May be mounted singly, in pairs, or spaced as needed.
- Knife is sharpened while machine is in use.

Send for Folder

DEMONSTRATIONS in YOUR PLANT gladly arranged. Write, wire, or call.

EASTMAN MACHINE COMPANY

Buffalo 3, N. Y.

Cleveland 5768

NEWS ABOUT SUPPLIERS Continued

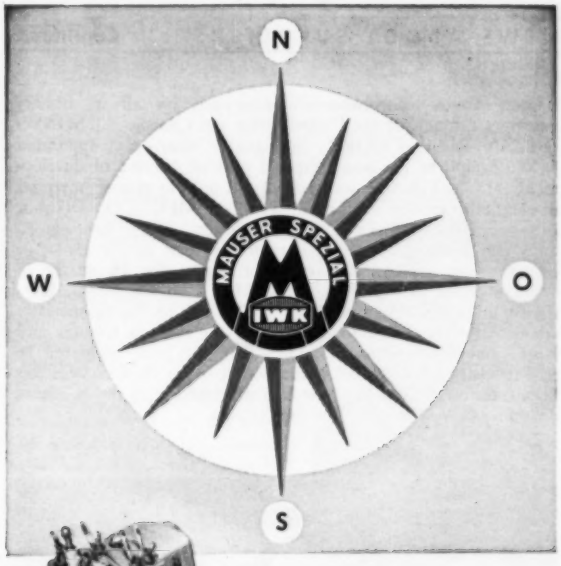
Singer sales manager in the New England district with headquarters in Cranston, R. I. . . . **GEIGY CHEMICAL CORP., DYESTUFFS DIV.**, Ardsley, N. Y.—Has named S. Lee to the staff of the Textile Pigment Development Laboratories. . . . **GENERAL ANILINE & FILM CORP.**, New York, N. Y.—Has named C. C. Cayce Southern regional manager of General Dyestuff Co. W. B. Huntley will succeed Mr. Cayce as branch manager in Charlotte, N. C. The company has appointed Dryco Chemical Co., Baltimore, Md., as distributor for Antara Chemicals. . . . **HEYDEN NEWPORT CHEMICAL CORP.**, New York, N. Y.—Has named three product-sales managers in the Heyden Chemical Div. Dr. T. R. Aalto has been appointed product-sales manager of fine chemicals; E. L. Barkley, product-sales manager, synthetic-resin chemicals; and T. H. Risch, product-sales manager, organic intermediate chemicals.

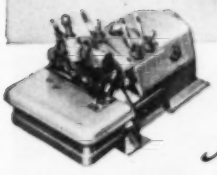
RUSSELL B. GALLOWAY (left) has been named general sales manager of Synthane Corp., Oaks, Pa. ROBERT D. CLARKE (center) has been appointed market manager for the paper and textile industries for Brown Instruments Div., Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. MURRAY STEMPEL (right) has been elected president of Morningstar-Paisley, Inc., New York, N. Y.

MINNESOTA MINING & MFG. CO., St. Paul, Minn.—Has promoted J. W. Selden to general manager of the Chemical Div. . . . **MONSANTO CHEMICAL CO.**, St. Louis, Mo.—Has named E. S. Robson Eastern regional sales manager of its Organic Chemicals Div. D. J. Murphy has been named district sales manager in New York City; and R. P. Sullivan is district sales manager, Wilmington, Del. G. D. Stewart has been appointed district sales manager at Syracuse, N. Y. M. D. Nall has joined the sales department of the division at Raleigh, N. C. . . . **MORNINGSTAR-PAISLEY, INC.**, New York, N. Y.—Has formed a new Gum and Technical Products Dept., consolidating the Technical Products Dept. with the Water-Soluble Gum Dept. . . . **NATIONAL STARCH PRODUCTS, INC.**, New York, N. Y.—Has changed its corporate name to National Starch & Chemical Corp. . . . **NOPCO CHEMICAL CO.**, Newark, N. J.—Has acquired Jacques Wolf & Co., chemical manufacturers of Clifton, N. J. The company is operating Jacques Wolf & Co. as a wholly owned subsidiary.

POLYMER INDUSTRIES, INC., Springdale, Conn.—Has started building an expansion of its research and development facilities at a cost of $500,000. The construction is scheduled for completion by late fall. . . . **RIDGE TOOL CO.**, Elyria, Ohio—Has announced that a mobile demonstration wagon will tour Florida, Georgia, Alabama, Mississippi, Tennessee, and South Carolina with a display and a demonstration of pipe tools. J. R. Wall will work on this tour. Another demonstration wagon will cover Quebec and the Maritime Provinces. It will be manned by R. W. Ifould. . . . **SACO-LOWELL SHOPS**, Easley, S. C.—Has promoted W. Lill to sales coordinator of the Fleissner-dryer section of the Textile Machinery Div. The company also announced that these dryers, formerly made in Germany, will be manufactured by the company's Gear & Machine Div., Sanford, N. C.

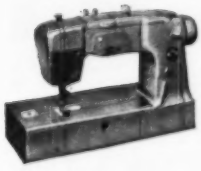
SCHMIDT MFG. CO. OF S. C., Greenville, S. C.—Has named Fred Harvell to its technical-sales staff. . . . **SCOTT & WILLIAMS**, Laconia, N. H.—Has named Torrington Co., Tor-





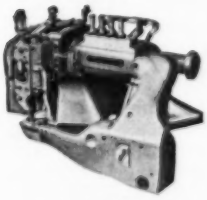
Mauser-Special

Industrial Sewing Machines



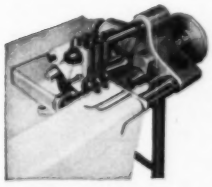
owe their international reputation to the precision of all their component parts, as well as to their most accurate assemblage and extremely precise adjustment.

A complete line of various types are manufactured. They are used for all appropriate purposes by manufacturers of hosiery and knit goods as well as clothing, woven goods, blankets and similar materials.



Our manufacturing program includes:

Overlock Machines
Single Chainstitch Machines
Double Chainstitch Machines
Machines for Sewing Elastics
Border-Attaching Machines
Band-Attaching Machines
Bag Sewing Machines
Cylinder Machines
Feed-off-the-arm Seam-Felling Machines
Flat-Seam Machines
Ribbon Cutting Machines



Leaflets are available on application

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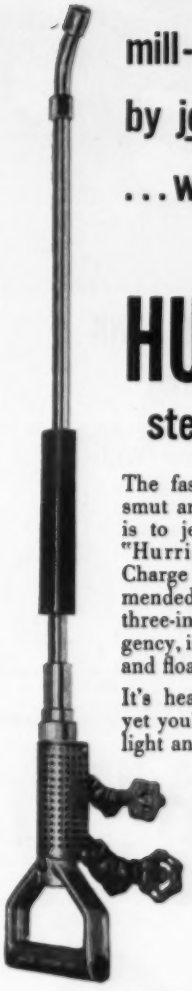
NOW...

mill-wide cleaning by jet-blast ...with the new Oakite HURRICLEAN® steam-detergent gun



The fast, new way to remove lint, oil, smut and grease from textile equipment is to jet-blast it loose with the Oakite "Hurriclean" steam-detergent gun. Charge this powerful gun with recommended Oakite detergent and you get three-in-one cleaning power: heat, detergency, impact. Then twist a valve to rinse, and float off all the loosened soil.

It's heavy-duty mechanized cleaning... yet you've never handled a unit so safe, light and easy.

SAFE Steam travels in an inner, insulated tube. Outer tube conveys the cool detergent solution. Mixing takes place at the nozzle. This keeps the gun always cool to the touch, always safe.

LIGHT Weighs a mere 6¼ lbs.

EASY A twist of the tube grip changes direction of the spray. No dragging and kinking of hose lines. Cleaning 'from under' is a cinch.

You'll find that the Oakite "Hurriclean" gun brings big savings in time and money, while doing a far better cleaning job on looms, spinning frames, tenter chains, dye kettles, slasher drums, drying cylinders and other equipment, and, of course, on floors and walls.

Ask your local Oakite man to let you try out the "Hurriclean" steam-detergent gun. Or write for details to Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

OAKITE
50 1909-1959 SCIENCE
years' leadership in industrial cleaning

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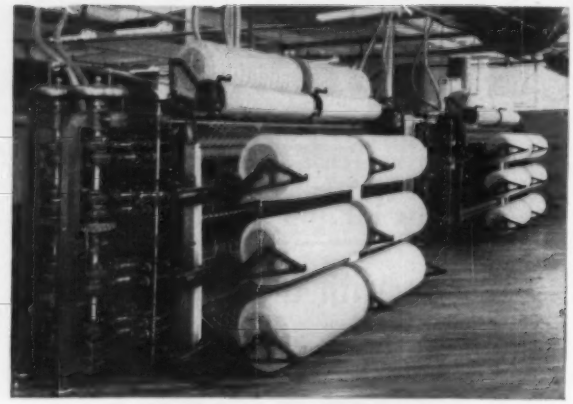

DOUBLE RUB, FOUR BANK
TAPE CONDENSER

Built in 48", 60", 72" widths for adaptation to all carding machines. Write for information.

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BEST FOR MARKING TEXTILES AND FABRICS!

JUNIOR EMPIRE

EMPIRE TEXTILE MILL CRAYON

The result of many years of careful study and experiment to meet the particular requirements of the Textile Industry . . . *Available in 18 Colors and in Two Sizes! Write for colorful marking guide. Dept. T-8*

THE AMERICAN CRAYON COMPANY
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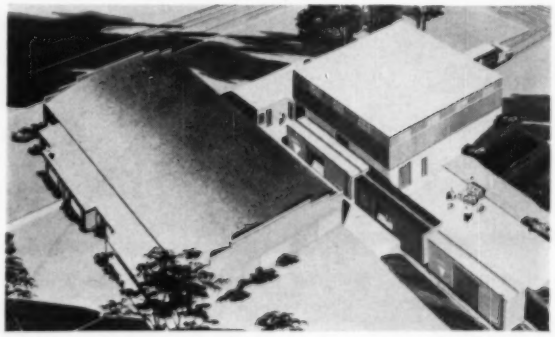
EMPIRE TEXTILE MILL CRAYONS

For more data, circle A-113 on Reader Service Card

NEWS ABOUT SUPPLIERS Continued

rington, Conn., distributor for flat parts for all its hosiery machines throughout the United States and Canada. . . . **SHAW-INIGAN RESINS CORP.**, Springfield, Mass.—Has appointed J. W. Arnold to the newly created post of director of development. D. A. Gendron succeeds Mr. Arnold as general manager of the Gelvatex Div. . . . **A. E. STALEY MFG. CO.**, Decatur, Ill.—And UBS Chemical Corp., Cambridge, Mass., have agreed on a merger of UBS into Staley on the basis of the exchange of one share of common stock of Staley for 1¾ shares of common stock of UBS. . . . **STEEL HEDDLE MFG. CO.**, Philadelphia, Pa.—Has promoted J. I. Long to shuttle-specialty salesman for the Southern division, serving mills in Georgia and North and South Carolina. Don Tate has been promoted to reed-specialty salesman for that division. W. A. Goodwin has been transferred from the New England territory to the Southern division and will work in South Carolina.



E. H. HOUGHTON & CO., Philadelphia, Pa, is now occupying this plant, warehouse, and office located in Carrollton, Ga, to serve its Southern customers.

STEIN, HALL & CO., INC., New York, N. Y.—Has announced that E. R. Shaw has joined the company as a burlap-sales specialist with headquarters in Atlanta, Ga. His primary concern will be to call on manufacturers of tufted carpets in Georgia and Tennessee. . . . **SUN CHEMICAL CORP.**, New York, N. Y.—Has named Dr. G. E. Sprenger research manager of the Warwick Chemical Div., Wood River Junction, R. I. . . . **THE TEXAS CO.**, New York, N. Y.—Has changed its name to Texaco Inc. . . . **TEXTILE MACHINE WORKS**, Reading, Pa.—Has negotiated with Pennsylvania State University to have the college's Wyomissing Center handle the cooperative training portion of the company's apprentice-training program. The apprentices will attend Penn State for a total of four semesters during their four-year apprenticeships.

UNION BAG-CAMP PAPER CORP., New York, N. Y.—Has bought controlling stock of Eastern Box Co., Baltimore, Md. G. W. Wagner will continue as president of Eastern, which will be operated under its present name as a subsidiary of the parent company. . . . **UNION CARBIDE CORP., SILICONES DIV.**, New York, N. Y.—Has named M. A. Lynch, Jr., product manager for the company's textile products. . . . **UNITED STATES STEEL CORP.**, New York, N. Y.—Has appointed M. E. Capouch to the newly created position of manager of distribution and availability for the American Steel & Wire Div. W. H. Guterl has been named manager of marketing for the division.

VAN NORMAN INDUSTRIES, INC., New York, N. Y.—Has acquired working control of American Pulley Co., Philadelphia, Pa. . . . **VICKERS, INC.**, Detroit, Mich.—Has elected O. C. Davis, formerly treasurer, vice president and treasurer. The company has promoted Dane Smith to district manager at St. Louis, Mo. The company has also announced that it has established a corporate market-research department with Milton Shapiro as manager. . . . **WORTHINGTON CORP.**, Harrison, N. J.—Has appointed C. D. Wood district-office manager in Boston, Mass.

NEWS ABOUT MEN

Preston Bailey has been named industrial engineer at Monroe Mills, Monroeville, Ala.

John C. Bell has been promoted to vice president in charge of cotton purchasing at Inman Mills, Inman, S. C.

Frank C. Bennett has been named president and treasurer of Anniston Mfg. Co., Anniston, Ala. He succeeds W. B. R. Pennington, who has retired.

Philip W. Boivin has been promoted to plant manager of French Worsted Co., Woonsocket, R. I.

T. W. Borland has been elected president and treasurer of Carlton Yarn Mills, Inc., Cherryville, N. C. He succeeds his brother-in-law, the late Ben R. Rudisill.

O. D. Boyd, vice president and general manager of the Martel-Henrietta Div., B. I. Cotton Mills, has been transferred to the company's main office in Greenville, S. C.

Allan Buttrick has been named to succeed the late R. C. Pohlers as head of the Simtex Furniture & Tickings Dept., J. P. Stevens & Co., Inc., Greenville, S. C.

W. Mitchell Carlisle has joined Seminole Mills, United Merchants & Manufacturers, Inc., Clearwater, S. C.

LOUIS L. JONES, JR., has been elected president of the Georgia Textile Manufacturers Association. He is president of Canton Cotton Mills, Canton, Ga. Mr. Jones succeeds W. C. Vereen, Jr.

John S. Conway has been promoted to product manager of drapery fabrics, Judson Mills, Greenville, S. C.

J. H. Coogan has been promoted from resident manager to assistant general manager of the Webster Div., Cranston Print Works, Webster, Mass.

Henry Counts has been promoted to executive vice president at Lebanon Woolen Mills, Lebanon, Tenn.

W. H. Dean has been promoted to product manager of man-made-fiber fabrics at Judson Mills, Greenville, S. C.

JOEL E. JOHNSON (left), vice president and director of Geneva Cotton Mills, Geneva, Ala., and Bama Cotton Mills, Enterprise, Ala., has been elected president of the Alabama Textile Manufacturers Association. DONALD COMER, JR., (right) executive vice president of Avondale Mills, Sylacauga, Ala., and president and treasurer of Cowikee Mills, Eufaula, Ala., has been elected vice president of the association.

CREELS FOR EVERY PURPOSE
EDWARD J. McBRIDE COMPANY
WARPING—WEAVING—WINDING—KNITTING—TUFTING
STOP MOTIONS—TENSION CONTROLS—CONE HOLDERS
Complete engineering service a part of every McBride installation.
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Automatic Machinery For Cleaning And Refinishing QUILLS And BOBBINS
J. M. NASH Company, Inc.
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"Special Finishing Machines Since 1890"
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ALLEN BEAM COMPANY
NEW BEDFORD, MASS.
Beams for all makes of High Speed Warpers
LOOM BEAMS
Adjustable Loom Beam Heads
"Good Warps are made on Good Beams"
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TEXTILE MILLS AND OTHER INDUSTRIAL PLANTS
BOSTON, MASSACHUSETTS
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ELECTRICAL, STEAM, DIESEL AND HYDRAULIC ENGINEERING
MACHINERY REORGANIZATION
WATER SUPPLY
INVESTIGATIONS
REPORTS AND APPRAISALS
CONSTRUCTION SUPERVISION
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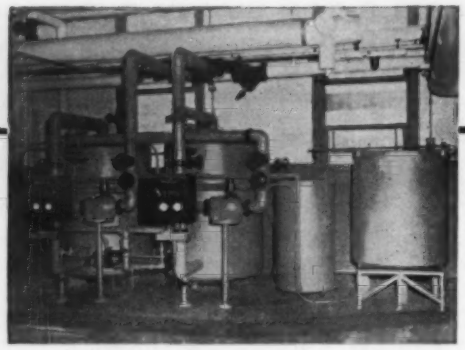

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Producing

CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As
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Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

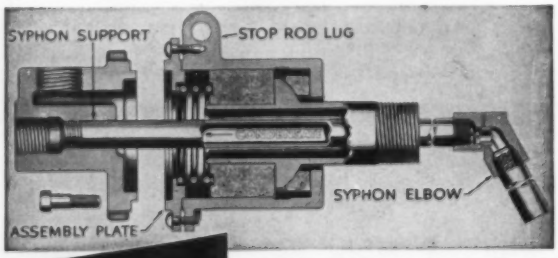
HUNGERFORD & TERRY, INC.

CLAYTON 9 **NEW JERSEY**

For more data, circle A-120 on Reader Service Card

TRY THIS on your Dry Cans and 30" Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



Johnson
ROTARY PRESSURE
Joints
First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5′ and 7′ cotton slashers, dry cans, etc.

THE JOHNSON CORPORATION
814 Wood St., Three Rivers, Mich.

NEWS ABOUT MEN Continued

G. N. Dorn has been appointed production superintendent of McCormick Mill, McCormick, S. C.

Wellington Dunford has been elected a director of Hanes Dye & Finishing Co., Winston-Salem, N. C.

Harold V. Ensten has been elected chairman of the board and treasurer of Lion Knitting Mills Co., Cleveland, Ohio.

Zane C. Evans has been named overseer of the spinning, spooler, and winding departments of Newberry Mills, Inc., Newberry, S. C.

Alfred A. Forster is planning to retire later this year as chairman of the board and general manager of Clifton Yarn Mills, Inc., Clifton Heights, Pa.

Jack Fisher has been named a vice president of Milliken Automotive Fabrics, Inc., Abbeville, S. C.

Ross Fowler has joined the supervisory staff of the cotton-finishing department of the Ware Shoals, S. C., plant of Riegel Textile Corp.

Joe Dean Garner has been named overseer of spinning at Limestone Mfg. Co., Gaffney, S. C.

Harry W. Hawksley has been named plant manager at Julee Comforter Mfg. Co., Holyoke, Mass.

MANFORD O. LEE has been elected president of Vanity Fair Mills, Inc., Reading, Pa.

Wayne Hays has joined The Kendall Co., Kendall Mills Div., Walpole, Mass. He will work exclusively on the development of nonwoven fabrics and related processes.

James R. Hibshman has been promoted to president of Lion Knitting Mills Co., Cleveland, Ohio.

Norbert K. Hibshman has been named executive vice president of Lion Knitting Mills Co., Cleveland, Ohio.

Wade Kennette has been named production superintendent at Limestone Mfg. Co., Gaffney, S. C.

Edward H. Largen has been elected vice president of Carlton Yarn Mills, Inc., Cherryville, N. C.

EDWARD E. WILD has been named president of the newly formed Linen Thread Jute Mills, Inc., Paterson, N. J. He had been technical manager of The Linen Thread Co. and at one time was vice president of Dolphin Jute Mills.

ARTHUR M. SPIRO has been named vice president of Waumbec Mills, Manchester, N. H. His headquarters will be in New York City. Mr. Spiro will be responsible for purchasing and sales of yarn and will coordinate fabric production with sales.

Henry E. Lollis has been named plant engineer at Proximity Print Works, a division of Cone Mills Corp., Greensboro, N. C.

Joe F. Mattison has been named assistant to the manager of the Sevier Plant, American Thread Co., Marion, N. C.

James L. McCormick has been elected president of Holt Hosiery Mills, Inc., Burlington, N. C.

John McGuire has been named manager of Airedale Worsted Mills, Inc., Stony Point, N. C.

James F. Nields, president of Ware Knitters, Inc., Ware, Mass., has been elected president of the National Knitted Outerwear Association.

Douglas P. Roper has been appointed product manager of Kingstree Mfg. Co., Kingstree, S. C.

James R. Smith has been named to the newly created position of chairman of the board and chief executive officer at Claussner Hosiery Co., Paducah, Ky.

Edwin Wilkinson has been elected president of the National Association of Wool Manufacturers.

M. E. Wright has been promoted to product manager for cotton fabrics at Judson Mills, Greenville, S. C.

Stanley Yourish has been elected assistant vice president and director of knitting at Lion Knitting Mills Co., Cleveland, Ohio.

Textile World

OBITUARY

William Y. Ball, 59, superintendent of Tolar, Hart, & Holt Mills, Fayetteville, N. C.

John E. Bassill, 62, president of American Enka Corp., Enka, N. C.

Charles F. Butterworth, 91, former vice president and treasurer of Draper Corp., Hopedale, Mass.

Horace A. Carter, 90, president and treasurer of The William Carter Co., Needham, Mass.

Lawton William Cleveland, 59, retired textile official, Asheville, N. C.

Frank A. Crocker, 78, acting secretary of Bear Brand Hosiery Co., Kankakee, Ill.

Arthur L. Gardiner, 74, office manager and treasurer of Columbia Narrow Fabrics Co., Shannock, R. I.

Myron V. Geltman, 62, one of the founders of Geltman Sponging Corp., Cleveland, Ohio.

Albert L. Gifford, 98, former stylist with Worumbo Mills, Lisbon Falls, Me.

Theodore Kimmel Leininger, 71, manager, Leininger Knitting Mills, Inc., Orwigsburg, Pa.

William P. MacDougall, 78, former president and chairman of Belding-Corticelli Ltd., Montreal, Ont.

Lester Martin, 52, president and board chairman, Bates Mfg. Co., Lewiston, Me.

Charles L. Pillsbury, 86, retired executive of Munsingwear, Inc., Minneapolis, Minn.

Richard C. Pohlers, 57, general manager of the Simtex Div., J. P. Stevens & Co., Inc., Greenville, S. C.

William O. Sanford, 94, retired superintendent of Cyril Johnson Woolen Co., Stafford Springs, Conn.

Charles C. Smart, 71, retired overseer at Lyman Mills, Inc., Lyman, S. C.

George W. Stowe, 73, president of Crescent Spinning Co., Belmont, N. C.

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Specializing in Textiles Since 1914

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ONE COILER EXCELS!

McDONOUGH

There are more McDonough large coilers in use than any other make. Try one in your mill without obligation and learn why.

McDONOUGH POWER EQUIPMENT, INC.
McDonough, Georgia, U.S.A.

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Always the best . . .

Now even better . . .

Publishing Date—
Mid-July.

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Individual Spaces with border rules for prominent display of advertisements.

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POSITIONS WANTED undisplayed rate is one-half of above rate, payable in advance.

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Discount of 10% if full payment is made in advance for 4 consecutive insertions.

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

TEXTILE CHEMICAL SALES

Opportunity in textile chemical sales development in North Carolina region operating from temporary base in Cleveland, Ohio. Products include acrylic, nitrile and vinyl resins. Product application training period expected. Prefer young man with background in textile chemistry and some industrial or sales experience.

Write:

B. F. Goodrich Chemical Company
3135 Euclid Avenue Cleveland 15, Ohio
Attn: K. L. Lindhurst

PRINCIPAL ENGINEER

Salary $12,000 to $15,000

T. E. degree and heavy bckgrd. with mfrr. or consultants, inc. design and layout of textile mchy. High type, personable, 35-45. Outstanding oppor. with large Southern consulting org. Fee paid. Send resume and photo.

JAMES PAIR PERSONNEL SERVICE
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Over 55 Years in Business

THE POSITION YOU WANT may be available right now. The demand for executives is increasing. Salaries are attractive. You are invited to send us your resume in confidence.

THE EXECUTIVE YOU NEED may be listed with us. Employers find our Service helpful and time saving.

Your phone call, wire or letter will bring prompt attention.

CHARLES P. RAYMOND SERVICE, Inc.
***Phone* Liberty 2-6547**
294 Washington St. Boston 8, Mass.

TEXTILE
TECHNICAL SERVICE & DEVELOPMENT

TO $8000

BS in chemistry or textile chemistry. To do development & technical service on vinyl & starch sizings & coatings. South Carolina location after training period in New Jersey. Write education & salary requirements.

P-1661, Textile World
Class. Adv. Div. P.O. Box 12, N.Y. 36,N.Y.

WANTED
ASSISTANT FINISHER

For dry finishing with experience on woolen goods. Good opportunity. Located in Massachusetts.

P-1302, Textile World
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

WANTED
Experienced
TEXTILE TECHNICIAN

For West Coast carpet mill.
Write

P-1813, Textile World
68 Post St., San Francisco 4, Calif.

Napper—Sueder

Rapidly expanding integrated textile plant requires aggressive person with ability to supervise napping and sueding departments. Unlimited possibilities for right man. Salary commensurate with ability plus usual benefits. Please reply to Textile World giving complete resume and salary required.

P-1803, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Overseer Wanted

Overseer of cotton carding wanted. Well established textile mill, Middle Atlantic States, wants man with technical and practical cotton carding experience for coarse work. Please submit work resume and salary expected.

P-1742, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

ADDRESS BOX NO. REPLIES TO: Box No.
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Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

POSITIONS VACANT

Wanted: Man to be foreman thoroughly experienced in all phases of manufacturing all metal reeds. Permanent position with future. Reply to P-1741, Textile World.

Throwing mill supervisor, top notch man for nylon & silk, full charge of production-methods, maintenance, quality and development of diversified sewing threads. Include salary requirements & experience. Write Advance Silk Thread Corp., 344 Lodi St., Hackensack, N. J.

Wanted: Experienced rubber roll compounder by leading rubber roll covering firm. Successful applicant to take charge of laboratory directing flow of compounds into production and development of new materials to meet demands of industry. Please submit complete resume and salary requirement first reply. All inquiries held in strict confidence. P-1586, Textile World.

Wanted—California rug manufacturer needs experienced fluff mill manager. P-1814, Textile World.

SELLING OPPORTUNITY OFFERED

Active Mfgrs. Reps. Handling non competitive loom supplies wanted to sell our Hardwood Picker Sticks in several Southern States, New England and Pa. on commission basis. Write with resume to RW-9537, Textile World.

POSITIONS WANTED

Graduate of an English textile college. 10 years experience in Raschel industry including laces, power nets & general pattern designing, analysis, mechanics, management, quality control. Available for responsible position with a progressive Raschel company. PW-1780, Textile World.

Braid Man desires position, as superintendent of manufacturing, setting, design or copy work on plain or fancy braided items. PW-1776, Textile World.

Available Raschel technician, textile school graduate, 10 years experience, specializing in Raschel knitted lace. Capable mechanic setting up machines. Analysis and interpreting designs from sketches. Also experienced in tricot mechanics. Industrious and loyal worker, desires position. PW-1752, Textile World.

Textileman mature major weaving progressive, energetic, can also invest. Relocate prefer suburban area. PW-1706, Textile World.

Do you need a good Woolen Superintendent Asst. Superintendent or production man. Have experience on W2 and W3 Looms on ladies and mens wear. Design Knowledge and blend experience. Spent many years in the weaving department. Available around the first of June. PW-1590, Textile World.

SELLING OPPORTUNITY WANTED

Thread salesman covering industrial trade on synthetic sewing thread & yarns desired to represent reliable Thread Manufacturer. RA-1631, Textile World.

BUSINESS OPPORTUNITY

Seamless bag patent for sale patent No. 2-471-380. Product finished on loom except cutting operations priced to sell. BO-1605, Textile World.

WANTED

Large Quantity of

DRAPER XD LOOMS
C&K S6 LOOMS

W-1739, Textile

Class Adv. Div., P. O. Box 12 N. Y. 36, N. Y.

COMMISSION SPINNER WANTED

For
⅞ Run Woolen Yarn

Reply

W-1744, Textile World
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

WANTED
SACO-LOWELL SPOOLER

MODEL 5–6 TO 7 IN. GAUGE

WHITTIER MILLS
CHATTAHOOCHEE, GEORGIA

WANTED
LARGE PACKAGE TWISTER

Suitable for carpet yarn

Reply

W-1747, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Wanted—Tricot Dyehouse Equipment

For overseas. Dyebecks SS, extractor, pad, Detacker, sewing machines, hot water storage tank, water softener, trucks, lab equipment, etc. Interested only in first class equipment. Quote all details, dimensions with price.

W-1517, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SOUTHERN MILL SUPPLY CO.

LIQUIDATING

MACHINERY AND SUPPLIES

MILLVILLE COTTON MILL

DIVISION MILLVILLE MANUFACTURING COMPANY, MILLVILLE, NEW JERSEY

OPENING ROOM

1—38½" Saco Lowell F5 Feeders, enclosed tops, high back.
1—41½" Saco Lowell F5 Feeders, enclosed tops, kick rolls, high back.
1—42' length Feed Table, 36" wide inside, slatted apron.
1—#4 Saco Lowell Bale Breaker.
1—Saco Lowell Vertical Opener, gallows drive.
2—#12 Saco Lowell Lattice Openers, cast iron, equipped with #11 Saco Lowell Condensers. Each driven by 5 HP G.E. 550 volt Motor.
1—#6 Sturtevant Fan, 5 HP G.E. 550 volt, 1730 RPM Motor.

WASTE ROOM

1—Saco Lowell Card and Picker Waste Cleaner, with Condenser.
1—10½" Waste Feeder.
1—Thread Extractor, 3' long x 8" wide x 32" high.
1—34" F2 Kitson Automatic Feeder.
1—#25 American Blower Co. Fan, belt drive, ceiling type.

PICKER ROOM

1—38½" Saco Lowell F5 Feeder, with Sargent comb.
1—36' length all steel Saco Lowell Feed Table, 16" wide, impregnated belt.
1—Kitson Morton Distributor, feeds into 4 Hoppers.
1—#7 Sturtevant Fan.
4—34½" F2 Saco Lowell Feeders, Low back.
1—Saco Lowell 4 Picker Distributor, rake type, 9' centers.
4—40" Kitson 3 beater Single Process Pickers, Motor Driven.
1—40" Kitson Finisher Picker, 4 lap delivery, P&D Evener.
1—100 lb. capacity Toledo Lap Scale, complete with overhead track.
1—38½" F2 High Back Feeder, kick roll.

CARD ROOM

52—40" Whitin Cards, Spindle backs, 12" coilers, 27" doffers, 110/120 clothing, Abbington traverse motions, belt driven. 23 Spindle, 29 C. J. back.
28—40" Howard and Bullough Cards, 12" coilers, 26" doffers, 110/120 clothing, Abbington Stripper Motions, belt driven.
1—Abbington Stripping System for 80 Cards, consisting of 1—Anglo-American Company 22x8 Air Compressor, Class ER-1 and 2 Receiving Tanks.
1—Howard Brothers Card Clothing Machine, motor driven.
4—Lines of Model K2 Whitin Bi-coil Drawing (2 frames of 4 deliveries each), 1941 model, 12" coilers, 3 shift hank clocks.
4—Lines of Whitin K Model Drawing (6 frames of 5 deliveries each) 1941 model, 12" coilers.

ROVING FRAMES

2—10x5 Saco Lowell 1949 model J-3 Slubbers, 116 spindles each, 8" gauge, chain compound.
4—10x5 Saco Lowell Slubbers, with D2 Drafting (3 rolls), 116 spindles each, 8" gauge, chain compound.
1—10x5 Woonsocket Machine and Press Slubber, equipped with Whitin Superdraft, 8" gauge, 88 spindles, chain compound.

SPINNING

68—Frames of 3¼" gauge Model "B" Whitin Spinning, 276 spindles each, band drive, warp builder, 1⅞" #1 flange rings in plate holders, Casablanca long draft, separators, driven by 7½ HP G.E. ball bearing Model 15K284B85 motor, 550 volt, 1740 RPM full load, American Pulley Company Tension control drives.
1—150 lb. capacity Scott Motor driven Yarn Tester, 110 volts.
1—Brown and Sharpe Yarn Reel.
2—Frames of Whitin Model "B" Spinning, tape drive, 7½ HP 550 volt motor. As 68 frames above.
28—Frames of 3¼" gauge Model "F" Filling Spinning, 1928-1929 models, with Casablanca, 20 frames 276 spindles, 8 frames 252 spindles each, tape drive, 1½" #1 flange rings, 39" frame width, drive by 5 HP G.E. squirrel cage 550 volt motor.
10—Frames of 3¾" gauge Model B Whitin Tape drive Spinning, filling, 216 spindles each, 1½" rings, Casablanca long draft, motor driven.
16—Frames 3¼" gauge Model B Whitin Spinning, 276 spindles each, 1½" #1 flange rings, Casablanca long draft, tape drive, 6-frames V belt driven and 10-chain driven, 5 HP G.E. 550 volt squirrel cage motors.

SPOOLING—WARPING—SLASHERS

2—Barber Colman Model HW Warpers with 432 end Model VC revolving Creels, complete with 550 volt motors, 26" Section Beams, 9" diameter barrel, 54½" between heads.
208—Beams for use with above Warpers, 26" heads, 9" diameter barrel, 54½" between heads, wood heads.
2—Barber Colman Automatic Spoolers, type A, model KK, 120 spindles each, serial Nos. 259, 265, running 3¼x3", chesses, motor driven.
1—10 Spindle Barber Colman Tailing Machine, model TM, 550 volt motor drive.
App. 7000—3¼ x 3" type A Bakelite Cheese Cores.
1—Type D Knowlton and Newton Return Air Condenser, complete with motor and drive.
2—Size 40 Sturtevant Ball Bearing fans used with above Condenser, fans are design 3, each driven by V belts from 5 HP 550 volt motors.
1—Size 40 Plain Bearing Sturtevant Fans, belt drive.
1—Fairbanks Floor Scale, double beam, 100 lbs. each beam, 54½" x 48" platform.
3—Saco Lowell Double Cylinder Slashers, 1—5' and 1—7' cylinder, standard headway, 2 have 8 beam creels, one with 7 beam creel, double roll size boxes.
4—250 gallon size kettles (3 cast iron, 1 copper).
2—Saco Lowell Size Pumps, belt driven.

WEAVE ROOM EQUIPMENT

482—40" E Model Looms, Draper, belt driven.
13—32" E Model Looms, Draper, belt driven.
54—30" E Model Looms, Draper, belt driven.
2—40" X Model Looms, Draper, belt driven.
1—4E Barber Colman Stationary Tying In Machine, Serial #301, with auxiliary equipment.
1—Hygrolit Yarn Conditioner Machine 26" inside width, made by Kearney.

CLOTH ROOM

1—48" C&M Inspecting Machine, motor driven.
3—40" C&M Inspecting Machines, motor driven. All Inspecting Machines equipped with rolling up heads.
1—85" C&M Inspecting Machine, complete with rolling up head.
1—60" Homemade Inspecting Table, measuring dial, rolling up head.
4—62" Homemade Inspecting Tables, measuring dials, rolling up heads.
2—48" Cloth Cradles with rolling up heads.
2—40" Cloth Cradles with rolling up heads.
1—40" double roll rolling up head, with dial and scray.
2—44" Shearing Machines, 2 blade, belt driven blades, with rolling up heads.
1—American Blower used with above Shearers.
1—40" Plaiter or Folder, made by Hacking Co. Ltd. with rolling stand and scray.
1—Elliott and Hall Cloth Folder, 46" on jaws, adjustable to 1½ yards, with scray.
1—Boomer and Boschert Cloth Press, screw type.
2—Howe Floor type Scales, 1000 lb. capacity, 48x54 platform.
2—Railway Sewing Machines, single needle Singer head, up to 48" goods, Dinsmore make.
1—Railway Sewing Machine, single needle, for 40" goods.
2—Railway Sewing Machines, C&M bed, Singer double head, for 45" goods.
9—Wilcox and Gibbs Sewing Machines, single needle.

LABORATORY EQUIPMENT

1—McBeth Cotton Classing Skylight, 13x86, complete.
1—Fulton Syphon Co. Fibrograph, 9/125 volt, serial 258, converted in 1954 to brake 0-⅛" gauge length.
1—Roving Reel, 12" diameter wheel.
1—Brown and Sharpe Yarn Reel.
1—Appearance Board, Alfred Suter, 1949 model.
1—Model D Scott Yarn Tester, 300 lbs. capacity, 110 volt motor driven.
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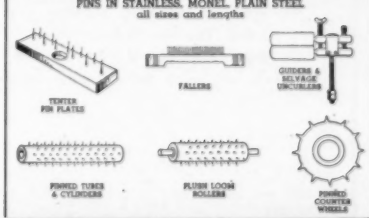

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Quality-Motor Control — Write for Bulletins 713, 709 and 712 describing motor starters.

A- 47 ALLEN SON'S CO., WM. 95
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A- 93 BRISTOL INDUSTRIAL DEVELOPMENT BOARD 158
Plant Sites—Write for copy of analysis of industrial potential.

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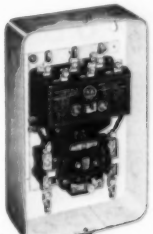

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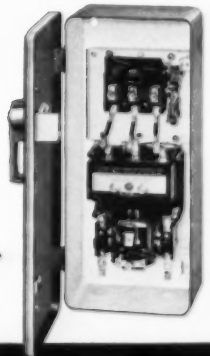

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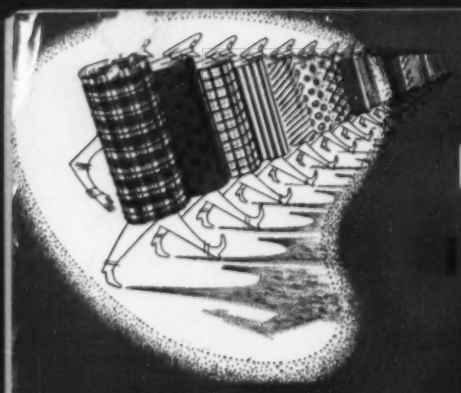

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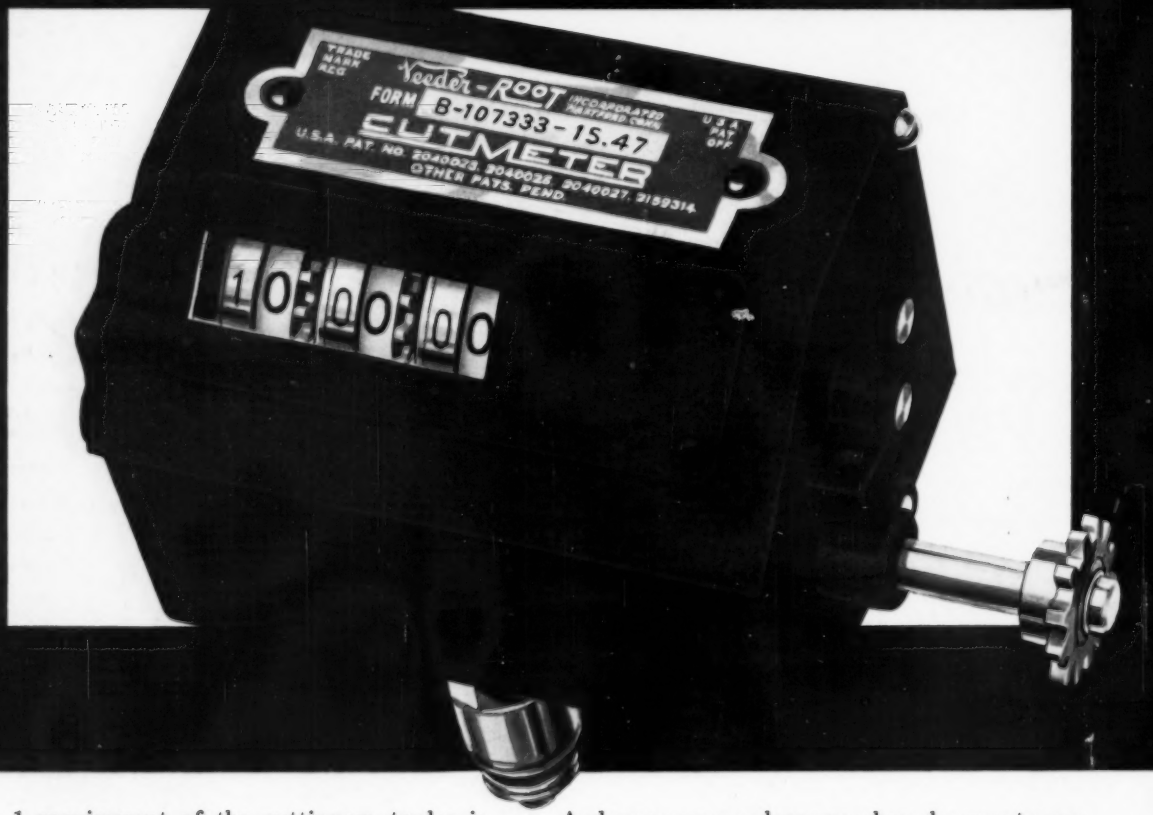

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